

T H E
FARMER'S MAGAZINE,
A N D
Useful FAMILY COMPANION.

CONSISTING OF
Practical Essays, Differtations, and Remarks,
On the DIFFERENT BRANCHES of
H U S B A N D R Y,
Including a great variety of Modern Improvements;
A MISCELLANEOUS COLLECTION of
Valuable FAMILY RECEIPTS,
Recommended from EXPERIENCE ;
Useful HINTS and curious OBSERVATIONS
From the PHILOSOPHICAL TRANSACTIONS, the Society
for the Encouragement of Arts, &c.
With some select Pieces of POETRY ;
And a candid Review of every New Treatise
ON AGRICULTURE, GARDENING, &c.

V O L U M E II.
ILLUSTRATED WITH COPPER-PLATES.

By **AGRICOLA SYLVAN**, Gentleman.

What makes a plenteous Harvest, when to turn
The fruitful Soil, and when to sow the Corn ;
The Care of Sheep, of Oxen, and of Kine ;
And how to raise on Elms the teeming Vine ;
Is here display'd. DRYDEN'S VIRGIL.

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M D C C L X X V I I .

FARMER'S MAGAZINE

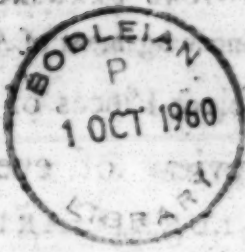
THE FARMER'S COMPANION

Practical Hints, & Information on
Practical Farming, Gardening, and Poultry

H. U. S. B. A. N. D. R. Y.

Valuable FAMILY RECIPES

Practical Hints and Observations



BY AGRICULTURAL SYLVAN, & COMPANY

Printed for the Proprietors by J. H. & W. L. LONDON
AND R. CRUTTICK, in LONDON
and sold by every bookseller, and Newmarket, and the Foreign

**T O T H E
P U B L I C K.**

THE First Volume being finished, we beg leave to return our sincere thanks to every kind encourager of the work,

Various hints have been received with proposed alterations and improvements; these will be attentively considered, and such of them adopted as coincide with our plan. Prescribed by our limits, we found it impossible to insert all the pieces sent us by correspondents; but in order to please as much as possible, we selected those articles that appeared to be the most generally useful and instructive. Perhaps a few of them may appear to be trifling; but even trifles, while they instruct, have their admirers among the more uninformed part of mankind.

We think it may without vanity be presumed that so much valuable original matter was never before published on such easy terms. We could easily give more in *quantity*, and at less expence to the Editors; nothing scarcely can be more easily *compiled* than a Farmer's Magazine; but we believe that bulk alone never yet received the palm of pre-eminence from the candid, the just, or the discerning.

Our appeal being to facts and experiments, which come home to ones bosom and business, we have endeavoured to deliver the whole in a plain, unornamented style, without embarrassing the Farmer with far-fetched allusions, technical terms, or the metaphorical flights of fancy. We have not attempted to delude him with gilded schemes, nor to perplex him with tedious calculations: these we shall with the greatest propriety leave to our modern book-builders,

The utmost care will be taken to continue this work with spirit and propriety, and we would hope for that kind assistance and encouragement, which we have at least *endeavoured* to deserve.





T H E
FARMER'S MAGAZINE.

A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]
American Husbandry.

IN NOVA SCOTIA the soil varies greatly; in many parts it is thin and gravelly on a bed of rock. For many years this was what they endeavoured to cultivate, but ill success taught the inhabitants a change which has proved very advantageous. They have fixed in the salt marshes on the Bay of Fundy, which although they required a very expensive drainage, yet from the fertility of the soil, repaid the Farmer much better than other tracts gained with much less difficulty.

The soil in these marshes is a mellow clay, and when drained is capable of producing good crops. The expence of getting this land however is not small; the sea is to be dyked out; those dykes are to be kept in repair, and the temporary flashes conveyed off. That part only adjoining to the coast is of any considerable value; and this arises from the benefit of harbours for the vessels, and the great ease in loading them with lumber for the West-Indies.

The settlers first fix upon a piece of marsh land with a piece of woodland adjoining; if the marsh is already banked, they pay an annual tax for the work; if not, they must bank it themselves. They next build a house, for which they have materials in great plenty; but as the trees must be grubbed, the labour is heavy. Three years are allowed them to settle; but it is often extended by favour to six or seven years. After ten years they pay a small quit rent to the King of two shillings only for every fifty acres; and covenant to plant with hemp two acres of every fifty taken up; but this is seldom regarded, the climate being improper for that production.

The quit-rents are not levied with the same rigid exactness as in England, nor are they expected to be paid in specie; any valuable commodity being cheerfully accepted.

The marsh-land is sown and wants little more after draining than to set the plough to work for sowing wheat; it is all covered with moss, which they plough in, and on one ploughing harrow in their wheat. This work is performed as soon as the snow is all gone, but in a very clumsy manner, not laying their lands at all neat or regular; were the wheat sown before the frost sets in the crop would be much greater; the snow would keep it warm and enrich the soil; whereas according to the present mode of ploughing, as soon as the snow is melted, it is apt to be chilled.

In September the corn is ripe; they usually mow it, and the crops, as may be expected from such husbandry, notwithstanding the goodness of the soil, scarce ever amount to middling ones in England. They have hardly any idea of fallowing, but in the succeeding year plough up the stubble for another wheat crop, which they repeat as long as the land will yield it, and then leave it to recover itself, sometimes, however, changing for beans. The wood lands when cleared they plant with pease, potatoes, cabbages, &c. As cabbages keep very sound under the snow in winter, they are peculiarly useful to the inhabitants.

As to inclosures, they have only a ring fence, and one or two near the house; some have no fence but what parts their marsh land from the woods. In summer the cattle are turned into the woods and undrained marshes, and in winter are three parts starved.

Their exports are fish and lumber; and it is remarkable, that without the fishery the inhabitants of this colony would starve, their husbandry being insufficient to feed them; a circumstance strongly characteristic of the merit of Nova Scotia as a colony. What sort of a country must that be, where government is forced to give a bounty on raising corn to keep the people from starving? yet this is the case with this colony; for on all wheat raised it is one shilling a bushel; on barley, oats, and pulse, nine-pence; and on roots six-pence.

A part of the winter season is appropriated to cutting and sawing trees; but from the severity of the season, the progress made in this work is inconsiderable, so that the lumber yields no great profit to the Farmer. Besides, the distance of the West-India islands, with the vast superiority of the more southern colonies in point of climate for this winter employment, greatly lessen the profit of the Nova Scotians.

There

There are however other circumstances to be considered, which are material; these particularly concern the great plenty of game in the country, and the general freedom of all sporting and fishing. One man with his gun will maintain a family the year round, pork and bread excepted. Eels are so plentiful in the little rivers, that immense quantities of them are kept frozen for winter provisions; these advantages are far from being trifling to housekeepers.

But neither the fishery nor the export of lumber prove advantageous enough to render the settlers comparable in ease and wealth to the people of New-England, New-York, &c. or we may add to the same class of men among our Farmers in Great-Britain. And when we consider the difference of climate; the agreeable and healthy life which is led even in winter in England; the friendly society enjoyed by our lowest classes of Farmers; the goodness of our roads, &c. &c. we may with wonder and astonishment ask, What can tempt any that feel such advantages to leave them in pursuit of imaginary happiness in the uncomfortable fogs and melancholy woods of Nova Scotia? where there are no roads; where the winters are miserably severe; and where society is scarcely at all to be found.

The fishing apparatus is expensive; and if that employment be neglected, the most profitable branch in the country is lost; the planters must then degenerate into mere Tartars, without a commodity for sale wherewith to buy manufactures. Let all these circumstances be well weighed, and attentively considered, and it will then be pretty apparent, that many of the emigrants who go to Nova Scotia with a view to practise husbandry, with more profit and advantage than in Europe, must find themselves miserably deceived.

The original idea of planting Nova Scotia was not indeed so much upon a plan of agriculture, as defence. The encroachment of the French made settlements and fortresses necessary; and the neighbourhood of Louisbourg rendered a safe port as a retreat for the navy indispensable. Upon this plan, garrisons were necessary, and these could not be well supported without an adjacent agriculture. There is something rational in this, but it extends no farther than the necessity of the case, and not to the immense expence which the nation has been put to on account of the colony, amounting it is said, to considerably more than a million sterling; besides, this argument since the peace has no longer any validity, whereas we have acted as if it continued in full force; and after feeling the unprofitable expence of one snowy desert, have

planted a second. This conduct would have been excusable had we possessed no other territories in America, but while such prodigiously extensive districts remained uncultivated to the south, it was really inexcusable upon every principle of good policy.

In CANADA the soil is of two sorts; the stoney, and the pure loam or mould without stones; both are cultivated, but the latter is much the best; it is certainly fine land, and was the climate equally favourable, its productions would be very rich and valuable. All the settlements and farms in this country being on the banks of the rivers, principally on that of St. Lawrence, the cultivated country is in general only a narrow strip on each side the river, scarcely any where half a mile broad, unless it spreads on account of other streams that fall into the principal one.

The common crops, as with us, are wheat, barley, rye, and oats; several sorts of pease and beans; many sorts of roots, particularly carrots, parsnips, and potatoes; many of the farms have an orchard, though not so commonly as in the old English colonies to the southward.

Their husbandry is very bad; the system is taking a crop and what they call a fallow; that is, they take a crop of wheat and after it leave the land at rest for a year; this can arise from nothing but the plenty of land. Though in general they let their lands rest only one year, yet some who have more land than others leave it sometimes several years before they sow it again, by which time white clover comes in great plenty; a striking proof of good sweet land!

As soon as the weather breaks, all the ploughs are at work to get in the corn, very rarely waiting for carrying on any manure; and on one ploughing they sow all sorts of grain and pulse. Some farmers however have of late years got into the way of sowing their wheat in autumn, and find (what might be reasonably expected) that the crop was more abundant, and the grain weightier and better.

Every farmer raises annually a small piece of flax for the use of his own family; but whatever may be the cause, whether owing to bad management or the climate, (we think the latter) it is not good; he has also a piece of tobacco for the family; every body smokes.

They have in most parts of Canada very fine upland meadows of natural grass of a fine sort, called the *poa angustifolia*, with great plenty of white clover, which are very advantageous to the farmers, yielding excellent crops of good hay in August.

The

The country inhabitants of Canada are all little Farmers, or Planters, as they are mostly called; villagers are rarely met with. They are in general a very happy people; yet their enjoyments are by no means numerous, and the whole country labours under two inconveniences, which very much prevent increase;—the want of communication in winter with the rest of the world, and the want of money for circulation.

Was it not for the river St. Lawrence, the whole country would be so destitute of communication, as to be almost uninhabitable; but that noble river, which is navigable for the largest ships to Quebec, and every where deep enough for all the inland navigation of Canada quite to the falls of Niagara, is the great channel of communication between the different parts of the country. Indeed the cultivated parts of Canada (as has been already noticed) are principally but narrow slips along the bank of this river, which to such parts answers every purpose that can be wished, of travelling and the conveyance of merchandize, and the produce of the farms to the towns of Quebec, Montreal, and Trois Rivières, in each of which is a regular market. No slight part of the demand in these markets is formed by the troops, who both enliven and enrich the colony.

The unsettled country is a forest, generally filled with various sorts of pines, oak, birch, &c. many of the trees are large. The soil in them has the same variety as the cultivated fields, and would if cleared produce equally good crops; but there are not inhabitants enough to extend the cultivation; so that such improvements must be some centuries off, and in the mean time the country must remain (except on the coast and the river) a mere inhospitable desert like Nova Scotia. The southern parts of Canada are much more pleasant and fertile than the Northern parts.

The husbandry practised in this colony is in many respects very defective; it being not only contrary to the common ideas of good farmers in England, but also to the dictates of the climate and other circumstances of the country. What condition can we suppose that land to be in which, after the crop is off, is left to run to weeds for a twelvemonth, and then sowed again with one ploughing?

The Canada farmers are very inattentive likewise to the charge of their corn crops, making very little distinction between successive ones of wheat, barley, or oats, and pease and beans; neither do they attend properly to the winter support of their cattle, or to raising manure, which their cold soils so much require to warm them. For where the soil is so chilled

led with frost, and drenched with snow, there must be a coldness in its nature, which demands that warmth which manure indisputably gives; but for want of due attention to this subject, no small quantities are still annually thrown into the river both at Quebec and Montreal, which is utterly inexcusable, considering their having water carriage to every farm almost in the colony.

Where land is in such plenty, and so cheap that every man may have as much of it as he can stock or cultivate; labour must be extravagantly dear; and while this continues, no great improvements can possibly take place; for who will work or labour for another when he can have a farm of his own? and we all pretty well know that but little of this business can be done by only one family.

If we take a view of a new settler or planter in Canada, we shall find he has land, and wood to build him a house; and after he has stocked his farm with cattle, and implements, and seed, he has the product of it in corn and roots to feed himself and family; the surplus of corn, if any, he may export, or exchange for other commodities: fish and fowl he has for the trouble of taking; flax and his family's labour supply linen; iron being the produce of the country he may buy it with corn; some coarse woollens are also made, tho' the quantity is but trifling; there remains for him to purchase rum or brandy, several articles of cloathing, guns, ammunition, some household furniture, sugar, tea, wine, and India goods, if he consumes any; and in order to procure these he has no other way than by his share of the export of corn and lumber.

It is very evident therefore that the life and enjoyments of a new settler in Canada must be strangely confined, and wanting even in what we should call the *necessaries* of life; tho' disbanded soldiers, servants, and labourers, may certainly make a shift to get fixed in a farm and find in it all the necessities of *their* life. If however a person in Great-Britain has an opportunity of a free or cheap passage to Quebec, and has a little money to buy a few cattle, and some implements on his arrival; he may in that case get into a business sufficient for the maintenance and support of himself and his family, which he could not be able to do in England. This is a case clearly in favour of Canada; but it is one that does not every day happen. Many of the emigrants who go over with no other view but to enrich themselves by farming, without a capital, however small it may be, are miserably disappointed, and experience all the miseries and wretchedness peculiar to these thinly inhabited cold countries; where there is scarcely an acquaintance

to converse with; no friend to pity or console; and where all, even the most common necessities of life must be procured with intense labour, and oftentimes with an equal degree of sorrow. In England our wants can be readily supplied at market, or the shops; far, very far different is the case in the wilds of Canada; there our wants, however pressing, must frequently remain unsatisfied, and at the same time aggravated with the difficulty, perhaps impossibility, of removing to a more promising or comfortable colony, or of even exchanging such an unhappy situation for a better.

This is not said with any view to depreciate Canada; we have been long convinced and well satisfied of its great value and importance to this kingdom; but we could wish to dissuade poor ignorant people from rashly involving themselves in difficulties and distresses, of which at present they very probably have no conception. [To be continued.]

ART. II. *On sowing Vetches in a summer Fallow for Wheat.*

Mr. SYLVAN,

THERE is a way of making advantage in a summer fallow for wheat by sowing vetches, which I have known some farmers do with success; they afford a most excellent food for horses and store pigs, when cut up green, and turn to good account if left for seed. I would advise every farmer to give the land three or four ploughings first, and if time permit and dung is handy, to give it a coat of dung; not that I mean to dung for the vetches, but for the succeeding crop of wheat, at which time the dung will work to admiration, and assist with the vetches to produce a good crop. I would recommend two or three sowings (an acre at a time) of the vetches, that there may be two or three fresh cuttings for the cattle; nor would I advise by any means vetches to be cut up before they are in full bloom, or after their kids are hard. The full crop meant to stand for seed may be sown as soon as ever the land is fit to receive it, and the quantity of good seed about two bushels to an acre.

The advantages a farmer will reap from this practice are evidently these. The land when cleaned of couch and weeds being sowed with vetches will continue so, as the vetches will destroy both from getting a head, whereas, if the fallow lay, the weeds would be again springing up.

An excellent food would be provided for his horses, and that at a time when it may be much wanted, between the crops

crops of clover, or when clover may be scarce, or it will save clover; and I think it no bad management in a farmer always to have hay enough by him.

The seed will turn to good account, as it has for some years last past borne a good price at market, viz. from 6s. to 8s. per bushel nine-gallon measure.

It is an excellent season for wheat, inferior in all probability to nothing, equal to peas, infinitely superior to beans, and I think better than a complete vacant summer fallow.

The land that suits vetches, or at least that I have tried them on, has been a strong land, and they about paid every expence, though I ploughed five times before I sowed them, as you may see by the following estimate:

Five times ploughing, at 5s. per acre,	1	5	0
Dragging, harrowing, and rolling,	0	15	0
Two bushels of seed cost	0	14	0
Rent and tithe,	1	4	0

£. 3 18 0

I sold about an acre and a half at 6d. per pole; some I made hay of, and excellent food it was; some I saved for seed, and the rest was cut up for the horses.

A BERKSHIRE FARMER.

[Facts speak for themselves, and we are well aware that vetches are very good things, and though they may not always answer quite so well as our correspondent has found them to do, yet would we advise their cultivation, as they must answer a very good purpose to the Farmer in every shape our kind correspondent has mentioned. One thing we must observe, which I suppose he forgot to mention, that it will be necessary to till the land after vetches for the wheat, that is, to give it three ploughings. He also forgot in his estimate to notice the manure, but as he did not mention it, we suppose he carried it to the wheat account. We shall be obliged to him for his future correspondence.]

ART. III. *On Chalk; its Properties and Virtues as a Manure.*

Mr. SYLVAN,

I Have been a constant reader of your useful work, ever since its first publication; and in return for the pleasure it has given me, the following observations on chalk, and its great use as a manure, are much at your service; they are made from experience, and may prove serviceable to some of your readers. I am, &c.

E. JACOBSON.

Norfolk, April 6, 1777.

Chalk

Chalk is a white fossil substance, usually reckoned as a stone; but when examined by the hydrostatical ballance is found to want much of the weight and consistence of a real stone. It is therefore properly a bole.

Chalk is of two sorts; the first hard, dry, and strong, fit only for lime: the second is soft and unctuous, and fit to manure lands, as it easily dissolves with rain and frost. It is best for cold sour land, and promotes the yielding of corn. It also sweetens grass so as to fatten cattle speedily, and causes cows to give thick milk.

When chalk is used for arable land, it is the opinion of the best practical farmers, that it should not be ploughed in too deep, but kept above ground as long as possible, that it may be gradually washed in by the rains, and incorporate more minutely with the soil.

Chalk does not improve land in the same way as dung:—the latter improves it by a fat, salt, nitrous quality, and by communicating to it the principles of vegetation: But chalk is only useful in opening the pores and particles of the land; and enabling it to give up all its strength, even till it becomes a *Caput Mortuum*.

Chalk is not (like dung) rich in its own nature, but only renders the land mellow, by loosening its parts, thereby enabling every particle of it to communicate its vegetative principle. Hence it is that land weakened by over ploughing after chalking, or ploughed as long as it will carry corn, will be laid down to grass in a poorer condition than it can be when only dunged:—For it is almost impossible to draw out the goodness of such land, because without chalk it is impossible to loosen its parts, so as to let out its vegetative virtue. Hence it appears that, properly speaking, chalk is rather a midwife to deliver the land of its fruitfulness, than what gives the fruitful principle of vegetation to it.

Chalk is found to afford the greatest improvement to those lands that lie farthest from it; because the lands that lie contiguous have much of the nature of the chalk in them.

Ten or twelve loads are generally laid on an acre, where they lay it single, which will, on some lands, cause extraordinary crops of corn for fourteen or fifteen years together. Where it is laid on grass grounds, it rather sweetens the grass than increases its bulk: this as was before observed fattens cattle speedily, and causes them to give rich thick milk.

A friend of mine in the Isle of Wight informs me, that the Farmers there often lay fifteen waggon loads on an acre—their chalk is of a fat soapy kind, and they call it marle: But the

Farmers in the hundreds of Essex do not lay on more than ten or twelve loads.

If chalk be dug out of the pit, and lie a summer before it is scattered, it will be so hardened and dried, that it will not easily dissolve. It should therefore be dug in the autumn, and laid on the ground immediately. The only objection to this is the shortness of the days, and badness of the ground for carting; but the advantages derived from this method will overballance them.

Chalky land is naturally cold, and therefore requires warm applications: It is also heavy, and will the better bear light composts. For this reason it is, that chalk is so great an improver of light, hot, and dry grounds.

If chalk be laid on clay, it will in time be lost, and the ground again return to its clay; and if clay be laid on chalk, in time the clay will be lost, and the ground return again to its chalky substance. Both chalk and clay are filtrated through the land on which they are laid, being soluble by rains into extreme fine particles; for neither of these manures is able to unite its finest particles with the particles of the land on which it is laid, so as to make so strict a union and texture with it as the land doth with itself, and is therefore washed down with rains till no sign of it be left. In some parts, it has been a common practice for the tenants, three or four years before they left their farms, to chalk their meadows; by which means those lands would throw out large crops of grass, but then they would be the worse for many years afterwards. The reason is this:—the chalk so mellows and opens the pores of the soil, that it is soon exhausted of its strength. But though chalk laid on meadows enables them to give a great crop for three or four years, and will thereby impoverish them, yet I take it to hold quite contrary in pastures: for the grass being thereby so much sweetned and increased, keeps constantly so much the more stock, by which it is maintained always in the same vigour.

Chalk on sandy ground laid up for pasture may wash and sink in, filling up the interstices, and thereby consolidate and mend the texture of such ground, and sweeten it, as it is an Alkali; and though in time most of the chalk may be washed downwards, yet, as such manure makes the grass come thicker and sweeter, the good pasturage enlarges the quantity, and mends the quality of the dung the cattle leave on it. And as chalk fills up the vacuities of sandy ground, so on the contrary it insinuates its particles into obdurate clayey and strong land, and divides it.

Chalk

Chalk laid on hop clover, and rye grass, is a great sweetner and improver of those grasses; being laid on it after harvest, it will quickly shew the benefit, especially if the ground be a four clay, and apt to run to coarse grass.

ART. IV. *Diseases in Cows, continued.* By C. Williamson.

WORMS.

COWS and Oxen are liable to breed worms in their stomach and bowels, which render them very poor and uneasy; nay, sometimes destroy them quite, or at least bring on diseases which will prove fatal: The coat flares, the eyes become dull and heavy, and the breath changes from a fine perfume to a hot smell, with evident marks of offence.—Let their meat be what it may, the beast looks not the better for it, but rather the worse.

RECEIPT.

Take Box leaves and Savine tops dried and powdered.

Green copperas, and

Powdered rhubarb, each two drams.

Honey enough to make a ball.

Let it be given every other morning for three times; after a week's intermission, give three more doses, and after another week three more; which will generally effect a cure. Observe, on the days of giving the ball, that the beast has no food for two hours after the dose is administered; and for drink, gruel will be very proper.

When the worms are in the strait gut, which can often be discovered, an emollient clyster, with a large quantity of linseed or train oil, should be given as often as twice a week.

[To be continued.]

ART. V. *Dissertation on the Winds.*

Mr. SYLVAN,

INCLOSED I send you a plain, and I think useful dissertation on the winds, which may possibly afford some entertainment to your readers.

I am, your humble servant,

J. ADAMSON.

Wind is defined to be a stream or current of the air, together with such vapours as it carries along with it: Or in other

M a w b l i n g o d h o m e **words**

words, a sensible agitation of the air, whereby a large quantity thereof flows out of one place or region into another.

The ancients reckoned only four winds according to the four cardinal points; but this was soon found to be a defective calculation:—the succeeding age added eight more to this number, which was thought too minute a subdividing. The last number was therefore soon reduced to four, taking every other, or middle wind, and adding them to the former account.

But our sailors, who far exceed the ancients for their skill in navigation, have divided the horizon into thirty-two equal parts, adding twenty-eight to the four cardinal winds. This proved exceedingly useful in navigation, but of little concern to the inhabitants of inland countries, useless to shew that the wind blows from every point of the heavens. In order to trace out the causes of wind by effects and phenomena, we may observe, that wind is generally attended with a cloudy sky; and that there are more winds in the winter, when there is more rain and obscure weather, than in the summer; and likewise in our northerly climates than in lesser latitudes, where there is generally a more fair and serene atmosphere. Hence it is very probable, that the aqueous vapours sustained in the air, from which clouds and rain proceed, may be the original cause of winds.

There is always a vast quantity of vapours exhaled by the sun from the surface of the sea, of rivers, and also of the earth; these vapours float in the atmosphere, and descend again in rain, snow, &c. The production of winds depend chiefly on the condensation of these vapours. The direction, or course of any wind, is according to the situation of the body of vapours whose condensation produces it;—for instance, if a concourse of vapours be gathered over the kingdom of France, the condensation of these would draw the air from England in a southerly direction, and produce that motion in the atmosphere, which we call a North wind; and so of the rest of the countries that border on it.

The greater quantity of rain that falls in winter must occasion more winds than in summer, because a greater quantity of vapour is condensed in the former than in the latter.

[To be continued.]

ART. VI. *On the different Plants proper for different Animals.*

To the EDITOR of the FARMER'S MAGAZINE.

SIR, I have been much entertained by many articles you have favoured the public with in the course of your work, and wish

to contribute my mite to its still further improvement; permit me therefore to offer you the following hints, for the consideration of some of your ingenious correspondents.

It is a self-evident proposition, that some plants afford more nourishing food for certain domestic animals, than others do: The well-instructed farmer, therefore, ought to know which of all the plants, that are or may be cultivated by him, will soonest fatten any species of animals that he may have it in his power to rear:—As also the comparative degree of nourishment afforded by each of these plants to each species of animals respectively. On this account there is greatly wanted an exact list of all the plants that are eaten by, or may be employed as proper food for cattle, arranged in order, according to the degree of nourishment they will afford; beginning with those that are most nutritive, and descending to such as will hardly be eaten by this class of animals, or that afford them only a bare subsistence.

Wanted also, a similar catalogue of plants with respect to horses, sheep, goats, hogs, rabbits, geese, and every other species of domestic animals that are proper objects of the farmer's attention. A well-executed work of this kind would greatly oblige many, besides

your constant reader, and very humble servant,

SAMUEL JENKINSON.

[We are quite of this gentleman's opinion, and hope, he, and others of our ingenious correspondents, will favour us with proper materials for undertaking so salutary a work with success. Mr. Jenkinson has our thanks for his favour, and we hope often to hear from him:—the greatest attention shall be paid to any thing he may please to send us.]

ART. VII. *The Ornamenting Quickset Hedges recommended.*

[From ESSAYS ON AGRICULTURE.]

ALTHOUGH ornament ought only to be considered as a secondary object by the Farmer, yet where it can be united with the useful it ought not to be disregarded.

The country is, perhaps, the best field for allowing the sympathetic affections of the mind to be exerted with the most unbounded freedom, which forms the basis of that desire for universal harmony that constitutes a true and correct taste; which is, perhaps, the best preservative that the mind can ever meet with against every low and sordid affection. Let not then the man who wishes to be extensively useful to his country, to his family, and of consequence to himself, close his eyes

eyes on the beauties of nature: But rather allow them to shed their benign influences on his spirit. It will serve to shorten his labour and sweeten his toil; will help to brighten those gloomy intervals that the mind which is totally occupied with sordid views must frequently experience, and be a source of content and cheerfulness, which must ever constitute one principal ingredient of rural and domestic felicity.

If then, you do not despise ornament entirely, or disregard the beauties of nature, you may render your hedges very beautiful without any additional expence, by intermixing a few plants of pyracantha with your thorns when you plant them. The pyracantha (evergreen thorn) is one of the most beautiful evergreens that we have in this country; but as it is a weakly plant, unable to support itself, it has in general been but little attended to. If a slip of this were planted between every second or third thorn, it would, in a short time, spread so far on every side as to meet; and being supported by the hawthorn would rise to the top of the hedge, and render the whole as beautiful as if it were composed of this plant alone. And as its large clusters of scarlet berries hang upon it during the greatest part of the winter season, the hedge would be made by it not only closer and warmer, but also more pleasing to the eye than it otherwise would have been. This plant is not an exceeding quick grower, but it is by no means difficult to rear; every twig of it, if stuck in a good soil, taking root as readily as a willow. I have planted it in this manner among my own hedges, and finding it answer the intended purpose, I can recommend it with the greater freedom.

If you are desirous of rendering your hedges still more agreeable, it may be easily done by planting through them a few twigs of different kinds of honeysuckles, or intermixing with them a few of the most hardy and freest shooting kind of roses, which will grow without any extraordinary degree of attention or care.

It will be best, however, not to plant the honeysuckles till the hedge is two or three years old; as some kinds of these grow so very fast as to endanger the hedge being choak'd by them if they were planted at the same time with it. A few plants of the crab tree, intermixed with the white thorn, form also a most agreeable variety, as the beautiful blush-coloured blossoms of that plant, so early in the summer, are extremely delightful.

[Our principal reason for giving this extract is, that our wealthy and intelligent Farmers may be induced to adopt the practice. A farm is only a large garden; and, by a little art and trivial expence, might be rendered as beautiful as can be wished. The gentleman who

who writes this note knows by experience, that the pyracantha is one of the best plants to form a good thick substantial hedge that can be used for that purpose. It will resist the severest frost in our climate, and being an evergreen, and armed with thorns or spines, will prevent the hedge from being easily penetrated. It never runs more than four feet high (unless when trained up a wall) and has a vast number of flexible collateral shoots, which may easily be interwoven between the larger stems of the hedge. These long flexible branches when laid into ground will speedily take root, so that a single plant in a rod of ground may soon be so multiplied as to fill up the whole space. The Farmer may easily procure plants by sowing the berries, which will come up the second year after sowing, and in two years more will be fit to transplant into hedges.]

ART. VIII. *Approved remedy for a cold or cough in a horse, communicated by an experienced Groom.*

TAKE a quart of ale, or strong beer, warm it, and put thereto four ounces of treacle and a quarter of a pint of distilled anniseed water: Stir them well together, and give it the horse at night after his ordinary food; next morning give him a pail of warm water, with a handfull of oatmeal in it, and a mash of malt with a handfull or two of beans; and let this be repeated till the horse is cured. It will be equally useful to oxen and cows.

ART. IX. *On rearing and preserving Timber Trees.*

Mr. SYLVAN,

I Am a constant purchaser of your Magazine, and (without any compliment) assure you I think it replete with much useful matter. There is, however, one thing which you have not yet given us any dissertation upon, but which is of much consequence for a Farmer to know:—I mean, the best mode of rearing and pruning trees intended for timber. It is not my intention to treat fully on this subject, but I beg leave to offer a few hints, for you, or some of your correspondents, to improve on, and enlarge.

Since the Society for the encouragement of arts, manufactures and commerce, first proposed honorary premiums for the propagation of timber, many extensive plantations have been raised in various parts of this kingdom; but the present mode of planting adopted in gentlemen's parks and pleasure grounds, will not answer the primary end intended by that society, namely, that of raising a stock of oak and fir timber sufficient

sufficient to supply the navy, and every interior demand for building houses, for fuel, &c.

The modern mode of planting and pruning is calculated rather for elegance, than use or profit. Gentlemen's plantations are so thick, that the trees can never arrive at any considerable size; for it is not uncommon to see clumps of trees forty or fifty feet high, the bodies of which are scarcely twelve inches diameter.

In some parts of the kingdom it is customary to *lop* trees, which in a few years would be good timber.—By this improper mode of practice, (introduced only to increase fuel) more timber is spoiled than the whole navy of Great-Britain would consume in a century. This gothic operation is destructive to all *Knee timber* and *Crooks* for the ship carpenter; such trees being afterwards constantly lopped as soon as the boughs become large enough for faggot wood.

Those trees which are suffered to run up for timber are also greatly injured by the present general practice of trimming up their side boughs, and leaving only a few branches on the top; so that they resemble the cabbage trees of the Indies. This operation is destructive to boards and planks, because at every limb which has been cut off there will be a defect when the tree overgrows the wound; there can never be any union between the *dead knot* which remains of the branch lopped off, and the *living knot* which overgrows it. Besides this injury to the wood, trees thus dismembered never grow so *large* as those which happen to escape the axe. They will indeed run up in height, but are generally small, knotty, and defective.

I would not be understood hereby, that the *under-boughs* of timber trees should not be taken off; for it is consistent with reason, that young trees especially ought not to be overburthened with branches; but in cutting these branches, I find, by experience as well as observation, that it is best to cut them at least a foot or sixteen inches from the trunk; by which means they generally remain many years alive, though not productive of much shoot; and in this state the body of the tree unites with them, as it swells by vegetation, so that no dead wounds will be in the timber afterwards.

I am, your humble servant,

A FARMER.

[We are obliged to our ingenious correspondent for the above favour, and wish to hear frequently from him: His observations seem to be very just in the general. Some objections may, however, be made to a *part* of what he has advanced; and we will state what *now* strikes us, and leave him to answer it. If none of the trees, in
woods

woods or hedge-rows, were to be lopped, or made pollards, what must be done for fuel in those countries where coals and peat are not to be procured without fetching them from places very distant, and at a great expence for land carriage? If he can obviate this objection, it will be an additional favour to us, and we shall receive it with pleasure.]

ART. X. *Advantages of employing Oxen instead of Horses in Husbandry, and for draught of heavy Carriages.*

EXTRACTED AND ABRIDGED

From the GENTLEMAN FARMER, by LORD KAIMES.

THERE is not any improvement in agriculture that equals the using oxen instead of horses: They are equally tractable, and purchased and maintained at much less expence. As this improvement is so obvious, it is natural to expect that every farmer would readily adopt it: Yet few are found in this practice. How is this to be accounted for? Men are led more by custom than reason: and in instances without number are fettered against their interest. "Why, (say they) should we pretend to be wiser than our fathers?" This fond attachment to ancient habits, and prejudice against new improvements, is, however, by degrees wearing off.—Many have nobly left the old beaten track, and found paths more pleasant as well as profitable.

But to return to the subject: The very great consumption of oats by work horses, would be totally saved by using oxen only. Did our own produce furnish this consumption, it were less to be regretted, but it is extreme folly to be at the expence of *importing annually* vast quantities of oats, all which might be saved by employing oxen only, in the business of the farm.

An ox (as I have already observed) is as tractable as a horse; and as easily trained to a plough or cart. I have seen a couple of them in a plough going very well without a driver, directed by the voice alone without a rein. Oxen, besides, are preferable for a steady draught, as they always pull to their strength without flinching: Horses, on the contrary, are apt to stop when they meet with unexpected resistance. Oxen are less expeditious in trotting, or galloping, but as farm-work is performed by *stepping*, let the step of a horse and an ox be compared, and the latter will not be found inferior; especially when an ox is harness'd like a horse. Col. Pool, in Derbyshire, ploughs as much ground with three oxen, as the neighbouring farmers do with four or five horses.

ses. In summer they eat nothing but grass—In winter they have hay or turnips when much worked; straw only when worked but moderately.

About Bawtry, in Yorkshire, four oxen in a plough do as much work as the same number of good horses. In divers parts of Kent, an acre daily is ploughed with a team of oxen, sometimes more. Near Beaconsfield, Mr. Burke ploughs an acre in a day with four oxen.—His neighbours do no more with four horses.

Hitherto the comparison holds pretty equal. In one article, oxen are evidently preferable. Their dung makes excellent manure; and by that means they always improve the pasture. Horse-dung on the contrary is so hot in its quality, that it burns where it falls, and consequently hurts the pasture. Horse-dung from the stable has a greater tendency to burn than to rot; and therefore, to render it useful, it should be mixed with cooler materials.

But the chief advantage of oxen comes under the article of *savings*, which branch out into many particulars. In the first place, the price of a horse fit for labour *doubles* that of an ox. An ox worth seven pounds will perform as much hard labour as a horse worth fourteen. This is an important article: The labouring cattle are the most expensive part of a farmer's stock; and it is that expence which keeps back from farming, many men, whose skill and industry would afford them a comfortable living. In this view it is greatly the interest of landlords to promote oxen, as they tend to multiply candidates for a farm.

As an ox is cheaper, so he is *fed* much cheaper in proportion than a horse. He requires no corn; and he works well on cut grass in summer, and hay in winter;—often upon oat-straw.

Thus by using oxen, a farmer can turn his whole crop of oats into money, except what is used by saddle-horses, and for seed: But according to the present mode of practice, the bulk of that article is consumed by farm horses.

A horse is liable to many diseases that an ox is free from: If he happens to turn lame, he is rendered useless. An ox can always be turned to account; for if disabled from work, he can be fatted for the shambles, and sold for more than he originally cost.

The stock of horses must be renewed every ten years at a medium; which is a heavy article of expence to the farmer. Oxen last for ever;—or, which is the same thing, can be sold

to

to the butcher, when past the vigor of work, for more money than will purchase new ones.

Horses require great attendance;—oxen, little more than giving them necessary food. It is sufficient employment for one man to manage four or five horses: He will manage with equal ease, double the number of oxen. The shoeing of horses is no inconsiderable expence; that of shoeing oxen is a mere trifle.

By this mode of husbandry, the advantage to the farmer is great; and to the kingdom much greater, by saving the importation of an immense quantity of oats. But the advantage arising from the use of oxen, is still more extensive;—it reaches to every rank of the people: There must be a great increase of oxen to answer the purposes of farming: Every one of these when past their prime, goes to the shambles: The markets would be filled with beef, which would not only lower the price of that article, but also of leather and tallow. The savings upon these articles would bring down the price of our manufactures; this would tend to lower the wages of workmen, and of servants.

Those people who use oxen, at present, differ in the manner of yoking them. Some yoke them by the *tip* of the horn; some by the *root*. Both these modes are visibly inconvenient. When an ox draws by the shoulder, like a horse, his head is free, and his motion natural. When yok'd by the horns, he lowers his head to the line of the draught;—thus his posture is constrained, and his step short. His neck is indeed strong, but his shoulder is a better *fulcrum* for the draught. When an ox is yoked by the shoulder, his harness should be the same as that of a horse. The only difference is, that as his horns hinder the collar from being flipt over his head, it must be open below, and buckled after it is on.

The only cause I can assign for horses having been so generally preferred, is bad roads; which, till of late years, were common throughout the kingdom; and being in many places impracticable for carts during winter, the farmers carried their corn to market on horseback. A proper furniture for the back of an ox was not thought of, though an easy invention: And horses being thought necessary for carrying burdens, they were at length employed instead of oxen in every branch of husbandry. Another circumstance contributed; because oxen require *no corn*, it is commonly imagined that they require scarce any food. Being put off during winter with a little dry straw, they become too weak for working;

and yet instead of increasing and mending their food, it has been vainly thought that multiplying their number in a plough would answer: But this, on trial, has failed.

We are now provided with good roads; and corn is generally carried to market in carts, and waggons, for which oxen are no less proper than horses. It is therefore hoped, that farmers will at last break through a bad custom, and open their eyes to their own interest. Nothing would be more to their advantage than to introduce oxen generally instead of horses in husbandry. Both landlord and tenant would soon find the benefit of this practice. Why then do not gentlemen encourage their tenants, both by precept and example, to follow a mode of practice that is equally beneficial to themselves and to their country?

As accurate computation is the touchstone of profit and loss, I have subjoined two tables, one to satisfy the farmer what he will save by employing oxen instead of horses; and one to shew what benefit would thence accrue to the public.

To set the first computation in a clear light, and to avoid fractions, I will suppose that a horse put to work at the age of five years, may endure hard work for twelve years, which is an allowance beyond the truth. An ox is put to work at the age of four, and at seven is in his prime, which is a proper time to feed for the shambles. The computation is accordingly framed upon a revolution of twelve years; during which period oxen are four times changed without any change of horses. At the end of that period, both must be changed, and a new revolution goes on as before.

TABLE, *shewing how much a Farmer saves by employing OXEN instead of HORSES.*

	£.	s.	d.
A horse of five years old, valued at	—	—	15 0 0
Grazing ditto, at 2s. 1d. a week, 24 weeks,	2	10	0
To corn in winter, 15 weeks, 2 pecks per week, at 8d. per peck,	1	0	0
To corn in spring, 13 weeks, 4 pecks per week, at 10d. per peck,	2	3	4
To shoeing and farrying one year,	—	0	12 6
Insurance against lameness, and death,	—	0	7 6
One year's maintenance,	£.	13	4
Twelve years' maintenance,	—	—	80 0 0
Total amount of the first cost, and one year's maintenance	—	—	95 0 0

The

		£. s. d.
Brought over	—	95 0 0
The horse when unfit for hard labour may be sold for	—	3 0 0
The expence of one horse at the end of 12 years,	£.	92 0 0

The Expence of an Ox twelve Years.

		£. s. d.
An ox 4 years old, purchased at	—	5 10 0
To grazing 24 weeks, at 18d. per week,	1 16 0	
Shoeing and farrying, one year,	0 4 6	
To insurance against accidental death,	0 2 6	
Amount of one year's maintenance,	£.	2 3 0
Maintenance for 3 years	—	6 9 0
Cost and maintenance	—	11 19 0
Deduct the price he can be sold at	—	7 10 0
Total cost at the end of 3 years	—	4 9 0
Total cost at the end of 12 years	—	17 16 0
Subtract this sum from the expence of a horse during the same time	—	92 0 0
The balance in favour of the ox is	£.	74 4 0

By this table it appears, that the annual expence of a farm horse exceeds that of an ox no less than 6*l.* 9*s.* 8*d.* Now supposing four horses necessary to a farm of 100 acres, rent 50*l.* yearly, four good oxen, well fed, will perform the same work; and therefore the using the *latter* instead of the *former*, will be an annual saving of 24*l.* 14*s.* 8*d.* which is nearly half the rent. And what will raise it above half the rent, is the interest of the money laid out, which is considerably higher upon the horse than upon the ox. There is, besides this, an article that preponderates greatly for the ox. His dung enriches the ground on which he pastures.—Horse-dung on the contrary is hurtful:—This is an article of great importance.

N. B. The hay or straw consumed by the horse in winter, is not less than that consumed by the ox; and therefore that article is left out with respect to both.

To

To the EDITOR of the FARMER'S MAGAZINE.

Mr. SYLVAN,

THE pleasure I have received from many useful pieces of information given in the course of your Magazine, induces me to present you with the following observations and experiments. If you think them worthy a place in your work, you are at liberty to publish them; as I have not a desire to conceal any thing that may tend to public benefit. I wish you (what I think you cannot fail of gaining) success in your undertaking; and am,

Swaffham, in Your constant reader and admirer,
Norfolk, April, 1777. A LOVER of AGRICULTURE.

ART. XI. *Experiments on the growth of Seeds.*

I HAVE frequently observed in the spring time, when the blades of barley first began to shoot out of the ground, dewy drops standing every morning on the points of the blades, when the grafs of the fields had not any dew upon them. I was at a loss for a considerable time to account for this; but a little reflection on the nature of dews, convinced me that these drops proceeded not from the surrounding vapours of the air, but from juices drawn up by the roots of the plants, which passing up through the tubes issued out at the top. In order, however, to be certain, I took a pot of fine garden mould, and placed it in my study; the earth was but moderately moist, and I sowed in it a handful of barley. When the barley had shot up about half an inch the pearly drops appeared at the ends of the points: I wiped them all off, and carefully taking up half a dozen of the blades of barley by the roots, with a pair of scissars I cut off the roots close above the grains of corn, and planted them in the same earth again. The next day I looked at my pot again, and found the pearly drops of water settled on the rooted blades as before; but on the tops of those blades whose fibrous roots I had cut off, not the least moisture appeared, though the blades were green and fresh from the moisture of the earth they were planted in. This shews plainly, that the watry drops are not collected from the moisture of the external air, but formed of the juices drawn upwards from the roots. I again wiped off the said drops, and within three hours found them renewed so as to trickle down the stalks. This experiment was made in a mild time in December. From hence it appears that the moisture appearing on the blades of plants is in proportion to their roots.

As

As these exsudations take place as soon as the sharp pointed blades appear, we may reasonably conclude that the moisture immediately begins to discharge itself as soon as the spear is shot through the end of the barley corn, and serves to soften the earth above it as the blade rises, and thus facilitates its passage.

The last summer was dry, but not hot, (a few days excepted.) In November I malted barley, which had taken no wet in getting in; and was seemingly very dry and hard. I wondered to find that in every handful I took up from the malt floor, there were at least one hundred grains that did not come. I stayed till it came round to the kiln, and then took twenty of the grains that did not sprout with root, and put them, the third of November, into a garden pot with very good mould, and set the pot in my study. On the thirteenth I opened the earth in the pot, and found fourteen of the corns had put forth roots, but not speared: The other six had not any signs of shooting; I therefore concluded them to be *dead* corns. Hence I judged that my land being cold in nature, and coldly situated, would not ripen barley in perfection, except in hot summers; and that this barley, which did not shoot till nine days after it had been taken from the last floor, would have proved very coarse and edge-grown barley had it been sown in the field: It also seems plain from hence, that, not only when barley takes wet in harvest, or is cold by reason of a wet summer, but even in all but the very hottest summers, our barley should be sweated on the kiln in order for malting.

It is now further to be observed, that the very same barley, out of the same field, and of the same goodness with the twenty grains above-mentioned, and which had not taken wet in harvest, after the floors had been seasoned with drying off two kilns, did so far root, that out of a handful of it, when it had so passed the floors as to be within a week of the kiln, I did not find above thirty grains but what struck a root. Note, it is to be observed, that by drying off two kilns, and carrying the malt through the floors, the house had been so warmed, that the vegetative powers of the barley were forwarded and exerted by such heat.—Hence I also conclude, that wheat, if it handles cold and heavy, will do best when sown early, while the season is warm; for if sowed late, it will grow worse and come up late, by reason of its innate coldness. The same will hold good in pease, beans, and oats: when cold and black by reason of a wet harvest, they ought not by any means to be sowed on cold land.

In order to make a more full experiment I have tried different

rent grains from different soils.—January 8th, I put into a flower-pot two hundred grains of black Poland oats, marked No. 8.—The same day I put into another flower-pot, two hundred grains of English oats, marked No. 9. On February the 16th, both were come up an inch in spear: by the eye I could not discover any difference of the number come up in each pot; although it appeared plainly that the Poland oat came up with the strongest spear. On the 27th, after both sorts had been some days in blade and leaf, it was discernable that the leaf of the Poland oat was broader than the other, and the stem proportionably stronger.

There is one thing not easily reconcileable, and which may well afford matter of speculation to the curious; which is, that very good earth, though exhausted never so much with ploughing, (so that it will not bear a crop of corn) yet will in a few years recover by rest; whereas land poor by nature, and yet capable of bearing as good a crop as the land that is naturally rich, when its strength is at the lowest by being overwrought by the plough, will make little improvement in proportion to the other land, and never exceed a certain fecundity, which is its *ne plus ultra*.

I am at a loss what solution can be given of this phenomenon, unless it be this: that the earth which was naturally good, consisting of a just and happy texture of parts, filled by a due continuity to receive the aforesaid elements, do then let through and suffer the *faces* to be washed away, or purified by the continual free access of the elements; whereas on the contrary, the poor land, either by too strict a bond of union, (as clays, &c.) are too compact and consolidated to admit the kindly influence of the elements; or else they retain the juices, till, for want of circulation and ventilation, they stagnate and become acid, and by reason of the coldness of the earth they are shut up in, are not capable of a sufficient fermentation to be converted into fixed vegetable salts.

The other sort of poor land, which being once impoverished is a long time before it recovers, runs into a contrary extreme: viz. that of too loose a mould, which may be compared to a person under a dysentery, who has no retentive faculty; through this land the nourishment passes so quick that it does not abide long enough to receive a fermentation; but the spirits, and all the fat, oily vegetable salts received, are washed away undigested: Such ground therefore can receive only slow recruits from the elements.

Or shall we rather say the advantage, or enrichment that good land receives by rest after it is impoverished, seems in a great

great measure to arise from the effluvia of the layers, or beds of earth many feet deep, which, in time, are exhaled into their proper surface, and there, by the heat of the sun, converted into fixed salts.

[Our ingenious correspondent is entitled to our best thanks; and his future favours will be highly acceptable; but as some part of his style is *necessarily* a little above the comprehension of the common class of Farmers, we shall be obliged to him if in his future favours he will confine himself more to *experiments and facts*, than *philosophical reasoning*; which, however *just*, is not altogether so well adapted to the comprehension of our readers in general.]

ART. XII. To prevent Flies from damaging Turnips, Cabbages, &c.

MR. SYLVAN,

IF the following (which I venture to call *excellent*) receipt, for preventing the flies from damaging the seedling leaves of turnips, cabbages, favoys, cole, and many other vegetables, meets with your approbation, the insertion of it in your useful magazine may oblige many, as well as

Your constant reader,

Norfolk.

A. Z.

Mix one ounce of flour of brimstone with three pounds of turnip seed, daily, for three days successively, in an earthen glazed pot, and kept it close covered, stirring it well together at each fresh addition, that the seed may be the more tainted by the sulphur;—then sow it as usual on an acre of ground, and, let the weather prove wet or dry, it will keep the fly off till the third or fourth seedling leaf is formed; by that time, they will all be somewhat bitterish, and consequently very much out of danger of those little black flies which in summer time may be often seen in swarms near the ground, searching for the young plants, and which in some seasons ruin thousands of acres.—This remedy will not cost more than sixpence an acre, and may be used with equal success mixed with the seeds of cabbages, favoys, cole, &c.

ART. XIII. On the Improvement of Moor-Land.

MR. SYLVAN,

HAVING received considerable advantage from several hints contained in your magazine, I take the liberty, in return, to send you an account of the method I have taken

to improve a piece of *Moor-Land* which belongs to my farm ; and which my predecessors never thought it worth their while to meddle with.

I began with ploughing as much of this *moor* as I had a prospect of dung for. It was cross ploughed in the spring following, and well harrowed. About midsummer, I ploughed it again in the direction of the first ploughing, and harrowed it well. It was ploughed the fourth time before winter without harrowing. I ploughed it a fifth time in the succeeding April. By this time the sward was well broken and rotted. It was then dunged liberally ; and after ploughing the dung in, I sowed it with turnips. New ground, however poor originally, never disappointed me of a rich crop of turnips the first year ; barley or oats the second ; and clover or ryegrass the third. In the year 1769, being unwilling to trust wholly to the *moor* for my turnip crop, I prepared and dunged part of my best fields, and sowed them with turnips : Not a single drill appeared from my first sowing ; and but a scanty crop from the third : In the *moor* not a single drill failed. I was anxious to discover the cause : I could not attribute the difference to soil, or situation, which were both in favour of the fields, and the management was the same. The black fly, indeed had almost destroyed the field crop, but I was puzzled to know why they had abstained from the *moor*. Upon examining narrowly the two fields, I discovered that the black flies were young, and very small, not able to fly, but only to crawl or hop about. Not a single fly was to be found in the *moor*. This led me to the following speculation. Nature has taught the various tribes of flies and insects to deposit their eggs in places best adapted for the production and nourishment of their young : Warm and rich lands answer these purposes the best : *Moor* grounds are cold and barren. I reflected further, that when once these insects chuse for their habitation a rich soil where there is plenty of food, they deposit their eggs there, and a race is propagated from year to year.

—, *Yorkshire*.

March 20, 1777.

I am, sir, your constant reader,

H. RICHARDS.

[We thank our correspondent for his kind information. His method is good ; but it is laborious and expensive. We apprehend that the soil on which he tried his experiment, might, with three ploughings, have been rendered as proper for turnips, as with six. The following alteration is what we would propose in similar cases : Let the *moor* be opened in winter when it is wet ; In spring, when the frosts are over, a slight harrowing will fill up the seams with

with mould to keep out the air, and rot the *sward*, or sod: In that state let it lie the following summer and winter, which will rot the sod more than if laid open to the air again by ploughing. In April let it be cross ploughed, braked, and harrowed, till it become sufficiently fine; and the manure laid upon it, whether lime or dung, be intimately mixed with the soil by repeated harrowings: This will make a fine bed for the turnip-seed, and there is little reason to doubt its answering as well as though it was oftener ploughed.]

ART. XIV. *On setting Pease.*

Mr. SYLVAN,

AS a proper mode of setting pease is essentially necessary for getting good crops, I now send you an account how they are set by Mr. Hunter, a noted farmer in Berwickshire.—This gentleman has of late set all his pease in drills: He sets double rows at a foot distance, and two feet and a half between the double rows; which admits of horse hoeing, and lets in the air sufficiently. By this method his crops are always good and plentiful. He has also adopted this method for beans on light land, with equal success.

I am, your constant reader,

C. D.

ART. XV. *On the Cultivation of Turnips.*

[From the GENTLEMAN FARMER.]

NO person (says Lord KAIMS) ever deserved better of a country than he who first cultivated turnips in the field. No plant is better suited to the climate of Great-Britain, or prospers better in the coldest part of it; and no plant contributes more to fertility.

There are few if any soils in this kingdom, but which, when well prepared, will bear turnips: But that on which they are raised in the greatest perfection*, is of the gravelly kind. Of all roots turnips require the finest mould; and therefore frost is the best harrow. In order that the frost may have its full effect, the land ought to be thrown into ridges by the plough in autumn. Let it lie in that state till the end of May,

O 2

unless

* If the noble author by the words "*greatest perfection*" means *sweetness* and *flavour*, we agree with him that a *light gravelly*, or *sandy soil* is the best: But if he means by those words, the *size* and *quantity*, we must beg leave to dissent from his opinion. The strong, rich, heavy lands in Norfolk and Suffolk produce the largest turnips, and the most in quantity of any soil in this kingdom. Some of them, the writer of this note has seen, that weighed near thirty pounds each.

unless it is very weedy, and in that case it will be best to plough the weeds in about the middle of April. The first week in June plough the field with a shallow furrow. Lime it if necessary, and harrow the lime into the soil. Draw single furrows with spaces of three feet between, and lay dung in the furrows. Cover the dung sufficiently by going round it with the plough, and forming the three feet spaces into ridges: The dung will then lie between the crown of every ridge. The season of sowing should be regulated by the time intended for seeding. If you propose seeding in November, December, January, and February, the seed ought to be sown from the first to the twentieth of June. But if you don't intend to seed them off before March, April, and May, omit sowing till the latter end of July.

If turnips are sown earlier than is above directed, they will flower the same summer, and run fast to seed, which spoils the root for food: If sown much later, they will not apple so large, and there will be little food but the leaves.

Turnips sown thin are liable to many accidents, which are not counterbalanced by the expence saved in thinning. If sown thick, they can better bear the ravage of the black fly, and leave a sufficient crop behind: It is also a protection against drought, and establishes the plants in the ground before it is needful to thin them.

The eminent advantage of sowing turnips, is, that besides a profitable crop, they make a most complete fallow; which, however is best obtained by horse-hoeing. On this account I confidently recommend sowing them in rows at three feet distance:†—Straiter rows will not leave sufficient room for the horse to walk in. When the plants are about four inches high, annual weeds will appear. Go round every interval with the slightest furrow possible, at the distance of two inches from each row, moving the earth from the rows towards the middle of the interval. A thin plate of iron should be fixed on the left side of the plough to prevent the loose earth from falling back and burying the turnips. The hand hoe should then be carefully used, so as not to disturb the roots of the turnips intended to stand, which should be left twelve inches asunder: A less distance will not leave them sufficient room to grow large.—Let the field remain in this state till the fresh appearance of annual weeds renders a
second

† This mode of sowing turnips, we believe, is mostly confined to Scotland;—but it has reason on its side; and we therefore wish, that some of our English farmers would adopt the practice, if only by way of experiment.

second ploughing necessary; which should be in the same furrow with the former, but a little deeper. In this ploughing, the thin iron plate, above-mentioned, should be taken off, that part of the loose earth may fall back on the roots of the plants; the rest will fill the middle of the interval, and bury all the weeds. When weeds begin to appear again, then is the time for a third ploughing in an opposite direction, which turns the earth unto the roots of the plants. This ploughing may be the latter end of August; after which weeds rise but faintly, and may be cleared by the hand hoe. In swampy ground, the surface of which is best reduced by paring and burning, the seed may be sown in rows with intervals of a foot. To save time, a drill plough may be used that sows three or four rows at once. Hand hoeing is proper for such ground; because the soil under the burnt stratum is commonly full of roots, which rot better under ground than when brought to the surface by the plough: In the mean time, while these are rotting, the ashes will secure a good crop.

[The mode of raising turnips proposed above by the noble author, is so different from that commonly used in England, that probably many of our readers may deem it chimerical; or at least too troublesome in so busy a season as that of harvest. We, however, wish them not to be deterred from trying the experiment by either its novelty, or a little additional expence. Numerous improvements have taken place in husbandry, which at first were treated with contempt: But facts and certain advantage go beyond speculative reasoning, and will in the end conquer long established habits, and remove the most stubborn prejudice.]

ART. XVI. *On the Fecundity of Fishes.*

Mr. SYLVAN,

AMONG all the wonders which creation exhibits throughout this globe, there is none which strikes the mind more forcible than that of the astonishing increase of divers species of animal life. In many kinds of living creatures indeed, it is difficult to calculate their increase; and we only guess at numbers which are indeed indefinite. But the fecundity of fishes is more easily ascertained; as it is in the power of every common arithmetician to calculate the number of their eggs when taken just before the usual season of spawning.

An ingenious gentleman published some time since, in the *Philosophical Transactions*, the following table, containing the number of eggs, he, on a nice examination, found in the several

veral species of fish mentioned; which for the entertainment of your readers, I send you as under :

In a carp,	203,109	In a pike,	80,338
cod,	5,686,760	prawn,	3,886
flounder,	1,357,400	roach,	81,586
herring,	36,960	shrimp	6,817
lobster,	21,699	smelt,	38,278
mackrel,	546,681	sole,	100,000
perch,	28,323	tench,	383,252

The mode of calculation is easy :—weigh one grain of the spawn or eggs in a nice pair of scales; then weigh the whole spawn of the fish, and by the common rules of arithmetic the number is easily and certainly found.

It is very observable, that the size of the eggs is nearly the same in great and small fishes of the same species, but the number is always in proportion to their size. I am, &c.

A Lover of Natural History.

ART. XVII. On Premiums for Improvements in Agriculture.

SINCE the spirit of improvement in husbandry has so generally diffused itself throughout this kingdom, many societies (in different parts of it) have been established, and premiums offered for the encouragement of such adventurers as dared to strike out new paths in the immense field of agriculture. By this means many sensible farmers have not only repaid themselves the expence attending new experiments, but discoveries in the mode of practice have been made which are of essential service to community.

We therefore propose giving a regular account of the premiums offered by the different agricultural societies for the present and succeeding years; beginning with

Premiums offered by the Breconshire Society.

1. To the person who shall reclaim and make profitable the greatest quantity of rough land, over-run with fern, broom, furze, or heath, uncultivated within memory, not less than five acres, and properly fallow the same for wheat or turnips, 3l. to be determined the second day of February, 1778.
2. To the person who shall effectually drain and clean the greatest quantity of boggy land, not less than one acre, or more than ten, 10s. per acre.—To be determined the 2d Wednesday in April, 1778.
3. For the best crop of hoed turnips, on any farm of

l.	s.	d.
10l.	a year or under, not less than two acres	1 0 0
Ditto,	from 10l. to 20l. a year, not less than three acres	1 10 0
	Ditto,	

Ditto, from 2ol. to 3ol. not less than four acres,*	2	0	0
Ditto, from 3ol. to 4ol. not less than five acres,	2	10	0
Ditto, from 4ol. and upwards, not less than seven acres,§	3	10	0

To be determined the 2d Wednesday in December, 1777.

4. For the greatest quantity of potatoes raised on not less than 4 acres upon a wheat fallow.—The best method is to set the potatoes in rows, 4 feet asunder, and 10 inches between each sett, and to be hoed during the summer season as often as necessary, 4l. To be determined the 2d Wednesday in October 1777.†

5. For the best two acres of potatoes, upon a farm under 2ol. per year, 2l.

6. A premium of 5s. per bushel will be given for all transplanted turnip-seed raised in this county, and the society will take any quantity, not exceeding 20 bushels, at 10s. per bushel, which is the medium price given for the best turnip seed in Norfolk.

7. To the person who shall top-dress the greatest quantity of turnips, clover, or any other grass-land, with peat-ashes, not less than 15 bushels per acre, and not less than ten acres, 2l. To be determined the 2d Wednesday in April, 1778.

8. To the person who shall burn a quantity of peat-ashes, not less than 100 bushels, during the course of the ensuing summer, keep them dry 'till the spring, and sell them to any farmer or farmers wanting them for top-dressing clover, &c. the sum of one guinea. To be ascertained on the oath of the purchaser or purchasers if required.

9. To any landholder, who produces the greatest quantity and best in quality, not less than three hundred weight, of clean clover seed, on the 2d Wednesday in March, 1778, raised within the hundreds of Bulth, Merthier, or Devynock, three guineas.

10. To the person who shall prepare the greatest quantity of land, and sow it promiscuously with acorns, ashkeys, chesnuts, beechmasts, and seeds of other timber trees, and shall preserve the young growth by weeding, hoeing, and good fencing against cattle, keep such coppices in good order for five years, not less than two acres, 5l. To be determined the 2d Wednesday in September 1779.—If a gentleman, a gold medal.

11. A premium of 6d. per bushel will be given to every labourer whose family shall gather any quantity of hawthorn berries between the 20th of October and the 12th of January next, the quantity to be certified under the hands of two substantial inhabitants in the neighbourhood, upon oath if required; and whatever quantity is brought to this society at their meeting in January 1778, will be bought at 1s. per bushel.†

12. To

* William Williams, of Kalunnaid, in Trallong, received this premium last year.

§ Morgan Morgans, of Pontwen, Clydatch, received this premium last year.

† Thomas Williams, Pantrydill, received this premium last year.

† Cottagers of Lanspythid and Lanthew parishes, received this premium last year.

12. To the person who shall spin from the 1st of May 1777, to the 2d Wednesday in November following, the greatest quantity of the best six-hank yarn, not less than 40 hanks

To the second best	10	0
To the third best	9	0
To the first best five-hank yarn	8	0
To the second best ditto	8	0
To the third best ditto	7	0
To the first best four-hank yarn	6	0
To the second best ditto	6	0
To the third best ditto	5	0
	4	0

To the person who shall spin the best and greatest quantity of coarse linen yarn, not less than 40 pound, and not less than one hank to the pound

To the second best ditto	9	0
To the third best ditto	8	0
	7	0

N. B. No person, having a freehold of 30l. per annum, or not being an inhabitant of the county, will be intitled to any of the above premiums.—All acres are to be understood statute measure.

All cottagers may have turnips to transplant for raising of seed, by applying to any member of this society.

THO. LONGFELLOW, Secretary.

[To be continued.]

ART. XVIII. *An Antiscorbutic Vegetable Syrup.*

Mr. SYLVAN,

AS I am conscious of having no other motive in troubling you on this occasion, than the good of my fellow-creatures, I shall make no apology for requesting permission, thro' the channel of your magazine, to present the public with the recipe of a most valuable and sovereign remedy, from the *Vegetable Kingdom*, which, by ample and extensive experience, has hitherto been found to prove extremely powerful and efficacious, in entirely eradicating, with perfect ease and safety, every species of the scurvy, leprosy, and all disorders whatever, which derive their origin from any impurities of the blood and juices. Those afflicted with the scrophula, vulgarly called the King's evil, though in general an hereditary disease, by duly persevering in the regular use of it, will assuredly find such amazing benefit, as happily to convince them of its great value and utility. In the very worst stages of the true rheumatism, its effects are remarkably successful; and I know not any thing in the whole *materia medica* that bids fairer

fairer to prove of infinite service also in the gout. The medicine which unsolicited I now lay before the public, is an agreeable Vegetable Syrup, very easily made, exceedingly pleasant to take, and at the same time so mild and safe in its operation, as not in the least to endanger or disturb the œconomy of the human frame, (which is so often the case with many medicines, that the remedy sometimes proves much worse than the disease) attended likewise with the satisfaction of knowing, together with the liberty of freely examining and investigating, upon the true principles of botany, every ingredient of which it is composed: even with the Veronica alone (Male Speedwell) the great Boerhave, in his history of plants, declares, that he has cured above a hundred diseases; and many of the inhabitants of France can also testify the very powerful and happy effects of that single plant in removing a great variety of disorders.

I have only to observe, that the present season of the year is the most proper time to enter upon a course of the above-mentioned Syrup. I am, Sir, your most humble servant,

St. James's, April 12.

CHRISTOPHER WESTON.

R E C I P E

Take of the leaves of Male Speedwell, four ounces;

Bark of Elder, two ounces;

Winter's Bark, three ounces;

Angelica root, sliced thin, half a pound;

Comfrey root, and

Fennel root, of each (sliced) four ounces.

Boil these ingredients together in two gallons of soft water, over a slow fire, till one half is consumed; then strain off the decoction into a clean earthen pan, and let it stand all night to settle; in the morning carefully pour off the clear liquor from the sediment, and dissolve therein three pounds of treble refined sugar, and two pounds of virgin honey, which are to be gently simmered into a thin syrup.

The dose is a large tea-cup-full, night and morning: or rather in some cases morning, noon, and night, adding to each dose, at the time of taking it, a small tea-spoonful of the late celebrated Dr. Huxham's Elixir of Antimony, which greatly heightens and improves the virtue of the medicine.

ART. XIX. *An Approved Remedy for the Rheumatism.*

TAKE Scurvy-grass, Brooklime, and Water-cresses, of each a quarter of a peck, wash them clean, put them in a well

glazed earthen pot, and bake them in a slow oven till you can press out a quart of juice; put two large table spoonfuls into half a pint of new whey, and drink in a morning fasting.

This receipt is recommended by a person who found a cure from the use of it when almost disabled from the common use of her limbs.

ART. XX. *Extracts from the Sixty-sixth Volume of the Philosophical Transactions of the Royal Society. Part II.*

Abridged State of the Weather at London, for one year, from March 1775. By S. Horsley, LL. D.

THIS article is an abstract of the meteorological journal published at the end of the first part of this same volume, being drawn up by the learned secretary of the Royal Society, and is accompanied by many curious and judicious observations. It is remarked, that

— 'The winds from the S. W. were again the most frequent of any, and next to these the winds from the N. E. Of the winds from the four cardinal points, the North was the most frequent, and the East the most rare. The autumn was the wettest quarter, and the spring the driest. The rain of the three summer months was almost half as much again as that of the three winter months; but the rain of the winter half year exceeded that of the summer half-year by about one-sixth of the rain of the whole year. September gave the greatest quantity of rain, and May the least, of any single month in the whole year.'

These remarks are evident from the abstracted tables, which contain the number of days in each month, &c. which the wind blew from each point of the compass, together with the quantity of rain which fell with each wind. It appears that the S. W. gave more than two-thirds of the rain of the whole year; but although it be naturally, with us, the wettest wind, the above-mentioned extraordinary quantity was not entirely owing to its greater wetness, but partly also to the greater length of time which that wind blew more than any other. From these tables we have computed, and expressed in the following table, the proportionable quantities of the time each wind blew, the proportions of the quantities of rain each wind brought, and the proportional degree of wetness of these winds, which last are directly proportional to the quantity of rain brought by each wind in the whole year, and inversely proportional to the length of time it blew, that is, the numbers in the fourth column are directly as those in the third, and inversely as those in the second.

Winds

Winds.	Proportion of times they blew.	Proportion of quantity of rain.	Proportion of degree of wetness.
N.	152	17	112
S.	145	13	90
E.	74	9	122
W.	125	105	840
N. W.	267	126	472
S. E.	230	50	237
N. E.	487	113	232
S. W.	1000	1000	1000

The least height of the thermometer here recorded, as observed in the severe frost in January, 1776, is 13.5.

By an extract of a Meteorological Journal kept by Dr. Farr, at Bristol, it appears that the winds are nearly in the same proportion as above related. But the whole quantity of rain here was 38½ inches, while that at the house of the Royal Society was only 27.

Extract of a Register of the Barometer, Thermometer, and Rain, at Lyndon in Rutland; by Thomas Barker, Esq.

This abstract shews the state of the barometer, thermometer, and rain, for the different months of the year. The least height of the thermometer (without) was 20 in the month of January; the greatest height in summer 78; but one day in April it was up at 80. In the four years, 1740, 41, 42, and 43, it is observed that there fell only 66½ inches of rain. Whereas in the last four years 1772, 73, 74, and 75, there was 125 inches, which is nearly twice as much! In this article is given a table containing the proportion of the quantities of rain in each month, being the medium of all the years from 1736 to 1775 both included, which it may be presumed is much nearer the truth than any single year is. From which it appears, that the most rain falls in the summer months, and the least in the winter; or, to be more particular, that from the beginning of March the quantity continually increases till about the middle of July, after which it decreases again till the March following. Mr. Barker concludes his observation with these remarks:

For a good many years past, since the seasons have been in general wet, the nature of East winds has been very different from what it was before. Several years after the great frost in 1740, there were a great many N. E. winds in spring, but they were in general cold and dry, stopping vegetation; but for the last ten years, the East winds have been often very wet; many of the greatest summer floods were by rain out of that quarter, and many times there came rain almost as certainly as the wind turned East.

He then subjoins the following curious experiment of the freezing of salt water.

An experiment of parting fresh water from salt by freezing.

In the severe frost last January, some salt-water being set abroad, froze into an ice, which was not solid but porous, the

hollows being filled with the saltiest part of the water, for the ice when drained, was quite fresh. The salt water, being again set abroad, froze as before; what remained still unfrozen was now become exceeding salt, but the ice, drained and dissolved, was little if at all brackish. This agrees with what Captain Cook mentions in his late voyage, that in $61^{\circ} 35'$ south latitude they filled their water casks with fresh water, melted out of ice found floating in the sea. By this experiment, if another time more fully repeated, it may be found to what degree the saltiness of water may be increased, by continuing to freeze away the fresh water.

May not the knowledge of this be of use to the salt-makers, especially in cold countries? The sun is strong enough of itself between the tropics to dry away the sea-water into salt; and I think, at the salt-works near Lymington, they increase the saltiness of the sea-water by drying it away in the sun before they boil it into salt. And this seems to be another means of purifying fresh water from the salt, which would save expence in boiling it away, and may be of use in the cold countries, and in winter.

Proposals for the Recovery of People apparently drowned. By John Hunter, Esq. F. R. S.

As every improvement on a subject so interesting merits particular notice, we shall lay before our readers the practical remarks contained in this article, observing only, that they are deduced from physiological principles, which the ingenious author previously endeavours to establish.

If bed-cloaths are put over the person so as scarce to touch him, steam of volatile alkali, or of warm balsams and essential oils, may be thrown in, so as to come in contact with many parts of his body. It will certainly prove advantageous if the same steams can be conveyed into the stomach, as that seat of universal sympathy will by these means be roused. This may be done by a hollow bougie and a syringe; but this operation should be performed with all possible nimbleness, because the instrument, by continuing it in the mouth, may produce sickness, an effect I should chuse to avoid. Some of the stimulating substances, which are of a warm nature, and have an immediate effect, may be thrown into the stomach in a fluid state; viz. spirits of hartshorn, peppermint water, juice of horse-radish; as many others also, which produce a more lasting stimulus, as balsams and turpentine, such as are found to quicken the pulse of a man in health; but the quantity must be small, as they have a tendency to produce sickness. The same steam and substances should also be thrown up by the anus. The process recommended under the first head of treatment should still be continued; while that recommended under the second is put in practice, as the last is only an auxiliary to the first. The first, in many cases, may succeed alone; but the second without the first must, I think, always fail in cases where the powers of life are considerably weakened. Motion possibly may be of service, it may at least be tried; but, as it has less effect

effect than any other of the usually prescribed stimuli, it should be the last part of the process. I would recommend the same care to the operator in regulating the proportion of every one of these means as I did before in the application of heat; possibly every one of them may have the same property of destroying intirely the feeble action which they have excited, if administered in too great a quantity; instead, therefore, of increasing and hastening the operations on the first signs of returning life being observed, as usually done, I should wish them to be lessened, that their increase afterwards may be graduated, as nearly as possible, by the quantity of powers as they arise. If the heart begins to move, I would lessen my application of air to the lungs, and with great attention observe when the muscles of respiration began to act, that, when they do, I might leave a great deal to them. I would by all means forbid bleeding, which, I think, weakens the animal principle, and lessens life itself, consequently lessens both the powers and dispositions to action. I would avoid introducing any thing into the stomach, which ordinarily produces nausea or vomiting, as that also will have a similar effect. I would avoid likewise throwing any thing in by the anus, which might tend to an evacuation that way, as every such evacuation also tends to lessen the animal powers; of course, I have avoided speaking of the fumes of tobacco, which always produce sickness or purging, according as they are applied.

Whoever is appointed by the society for the purposes of recovering drowned people, should have an assistant, well acquainted with the methods intended to be made use of, that while the one is going on with the first and most simple methods, the other may be preparing other means, so that no time may be lost between the operations; and the more so, as the first will, in all cases, assist the second, and both together may often be attended with success, though each separately might have failed.

A proper apparatus also is as essentially necessary to the institution, a description of which I here annex. First, a pair of bellows, so contrived with two separate cavities, that by opening them, when applied to the nostrils or mouth of a patient, one cavity will be filled with the common air, and the other with air sucked out from the lungs, and by shutting them again, the common air will be thrown into the lungs, and that sucked out of the lungs discharged into the room. The pipe of these should be flexible, in length a foot or a foot and a half, and at least three-eighths of an inch in width; by this the artificial breathing may be continued, while the other operations, the application of the stimuli to the stomach excepted, are going on, which could not conveniently be done, if the muzzle of the bellows were introduced into the nose. The end next the nose should be double, and applied to both nostrils. Secondly, a syringe, with a hollow bougie, or flexible catheter, of sufficient length to go into the stomach, and convey any stimulating matter into it, without affecting the lungs. Thirdly, a pair of small

small bellows, such as are commonly used in throwing fumes of tobacco up the anus.

'I shall conclude this paper by proposing, that all, who are employed in this practice, be particularly required to keep accurate journals of the means used, and the degrees of success attending them; whence we may be furnished with facts sufficient to enable us to draw conclusions, on which certain practice may hereafter be established.'

ART. XXI. *A method to destroy insects, and prevent blight on trees, by the late JOHN ELLIS, Esq. F. R. S.*

DISSOLVE a Winchester bushel of unslacked lime, one pound of flour of brimstone, and one pound and a half of tobacco dust, in twenty gallons of water; let it remain in the cask a fortnight, and, during that time, stir it thoroughly every day. When it is drawn off for use, it should be quite clear, and mixed with nearly an equal quantity of soft water. It must be thrown on the plants and trees just when they begin to bloom, and whenever the blights appear, by a watering pan or a forcing engine.

AVERAGE PRICES of CORN,

From April 7, to April 12, 1777.

By the Standard Winchester Bushel of Eight Gallons.

Wheat Rye Barley Oats Beans						COUNTIES upon the COAST					
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	Essex	5	2	2	5	0
London	4	9	2	12	2	3	1	11	11	2	9
COUNTIES INLAND.						Spffolk	4	10	2	9	2
Middlesex	5	6	2	4	2	3	4	0	2	11	11
Surry	5	4	3	4	2	7	2	3	3	8	
Hertford	5	5	2	5	2	2	7				
Bedford	5	4	3	4	2	5	2	1	3	2	
Cambridge	5	6	3	0	2	4	1	9	2	6	
Huntingdon	5	5	2	4	1	10	3	1			
Northampt.	5	9	3	0	2	4	2	1	3	2	
Rutland	5	9	2	6	2	1	3	3			
Leicester	5	6	2	9	2	6	2	1	4	0	
Nottingham	5	2	3	2	2	5	2	2	4	0	
Derby	5	8	3	2	7	2	2	4	1		
Stafford	5	8	3	6	2	6	2	1	3	11	
Salop	5	6	3	9	2	6	2	0	4	5	
Hereford	5	0	2	4	2	5	4	8			
Worcester	5	6	2	9	2	9	2	7	4	2	
Warwick	6	3	2	8	2	8	4	0			
Gloucester	5	7	2	4	1	11	3	5			
Wilts	5	9	2	6	2	2	3	10			
Berks	5	3	2	4	2	2	3	2			
Oxford	5	4	2	4	2	0	3	3			
Bucks	5	5	2	3	2	1	3	0			
						Durham	5	7	3	9	2
						Northumb.	4	8	3	3	1
						Cumberland	5	5	3	1	1
						Westmorel.	5	10	2	1	5
						Lancashire	5	9	2	3	1
						Cheshire	5	7	2	6	2
						Monmouth	5	9	2	7	1
						Somerset	5	11	3	0	2
						Devon	5	8	2	3	1
						Cornwall	5	8	2	6	1
						Dorset	6	2	2	3	1
						Hampshire	5	4	2	3	1
						Suffex	4	10	2	3	2
						Kent	5	2	2	7	2
						From March 31, to April 5, 1777.					
						WALES.					
						No. Wales	5	3	3	11	2
						Sp. Wales	5	3	4	0	2
						Part of SCOTLAND					
						Wheat Rye Barley Oats Beans Big	4	0	1	1	6
							4	0	1	1	6

Published by Authority of Parliament,

WM. COOKE.

REMARKS ON CORRESPONDENTS.

VARRO's Essay on Brewing came too late for insertion this month; but it shall certainly have a place in our next.—His future favours will be acceptable.

[We take this opportunity to request our Correspondents will in future send their pieces, by the 10th of the month, either to *W. Goldsmith*, in *Pater-Noster-Row*, or *R. Cruttwell* in *Bath*.]

R. K.'s Remarks on *setting* Wheat do not sufficiently explain the practice he wishes to recommend:—We expect from a correspondent in *Norfolk*, where this practice is general, an explicit account of the mode there used, and its success.

Mr. Geoffry Quickset should not abuse us, because our Ideas and his differ respecting the mode of raising Quickset Hedges. Till we meet with reasons more cogent than *He* has given us, we must beg leave to abide by our former sentiments.

Melinda's Ode on her Bullfinch is pretty for a Miss of 14; but we cannot this month oblige her by inserting it.

Great are our obligations to *Mr. Adamson* for his thoughts on *Marling of Sandy Lands*;—they shall certainly appear soon.—We beg the continuance of his favours.

POETICAL ESSAYS.

To SPRING.

An HYMN.

EVER-PLEASING, lovely Spring,
Waving soft thy balmy wing,
Fairest glory of the year,
On our longing plains appear!
Sweet inspirer of my song,
On a sun-beam glide along;
Shedding round, in mingled showers,
Verdant herbs, and fragrant flowers.

See! the beauteous nymph appears,
And a crown of roses wears;
Pinks and lillies mix'd are seen
On her robe of flowing green.
Welcome, welcome to these plains!
Welcome to the longing swains!
Thee with ravish'd voice I sing,
Bounteous, all-reviving spring!

Now the mornings fairer rise,
Gayer light now gilds the skies;
Now a gentle wisp'ring gale
Softly steals along the vale,
Now the husbandmen prepare
To improve the coming year;
Flinging free the generous grain,
Hoping pleasure, bearing pain.

Living verdure clothes the hills;
Wild along the crystal rills,
Gilliflowers and daisies spring,
And invite the muse to sing.
There the swelling blossom see,
Bursting forth from every tree;
Music wakes throughout the grove;
All is harmony and love.

Pouring forth their am'rous song,
See the tuneful feather'd throng!
While from every bloomy spray
Swells the sweetly-various lay.
Lowing herds, and bleating flocks,
O'er the dales and mossy rocks,
As with gladden'd hearts, they range,
Speak all nature's grateful change.

The CARNATION.

[From GERTR.]

AS Doris thro' the garden stray'd,
Beside a sweet-briar hedge, alone,
She saw, in liveliest hues array'd,
A sweet Carnation newly down.
With smile enchanting, near she drew,
And to enhale its rich perfumes,
Bends

Bends o'er its leaves besprink't with dew,
The flower to kiss her lips presumes.

My cheeks a sudden glow confess'd
As I beheld; and, ah! I cry'd,
How soon that happy flower hath press'd
The vermeil lips to me deny'd!

Doris retires—I quit my shade;
And shall I pluck thy tender bloom?
How precious by her lips is made,
How doubly precious thy perfume!
Grateful to me art thou, fair flower!
—More grateful than the drops of morn
Are to the honeysuckle bower,
Or th' opening blossoms of the thorn.

Eager I stretch'd my daring hand,
But quick she action disapprov'd,
Ah, no—unviolated stand,
Thou sacred flower by Doris lov'd!
Plac'd in her bosom, thou shalt meet
Her breath, more fragrant: So arise
Toward high Olympus Odours sweet,
When we to Venus sacrifice.

ROBIN'S SPECTACLES.

A T A L E.

ROBIN, who to the plough was
bred,
And never learnt to write or read,
Seeing the good old people use
To read with glasses cross the nose,
Which they for ever wore about them,
And said they could not do without
them,
Happen'd one day to come to town,
And, as he faunter'd up and down,
He chanc'd to spy where such like
things
Hung dangling in a row of strings;
It took him in the head to stop,
And ask the master of the shop,
If he could furnish folk, that need,
With glasses that could make them read;
Or sell a pair of, what d'ye call it!
Would fit his nose, and would not gall
it?

The man his drawer in one hand took,
The other op'd the bible-book.
The drawer contain'd of glasses plenty,
From ninety down to less than twenty;
Some set in horn, and some in leather,
But Robin could approve of neither;
And when a hundred pair he try'd,
And still had thrown them all aside,
The man grew peevish—Both grew
vext,—

And swore he could not read the text—

“Not read!—Confound you for a
fool;—

“I'll hang, if e'er you went to school.—
“Did you e'er read without the help
“Of spectacles?—“Why no, you whelp;
“Do people, who can walk without,
“Buy crutches for to stump about?”

The COUNTRY.

Written in LONDON.

NO, no, 'tis in vain, in this turbu-
lent town,
To expect either pleasure or rest;
To hurry and nonsense still tying us
down;

'Tis an overgrown prison at best.
From hence to the country escaping
away,

Leave the crowd and the bustle be-
hind,
You there will see liberal nature display
A thousand delights to mankind.

The change of the season, the sports of
the field,

The sweetly diversify'd scene,
Groves, gardens, and all things com-
bining to yield

An happiness ever serene.

Here, free from ambition, from avarice
free,

My days may I quietly spend,
While the city and the counters, un-
envy'd for me,

May gather up wealth without end.
No, I thank 'em, I'll never so add to
my store,

My peace and my freedom resign;
Who wou'd, for the sake of possessing
the ore,

Be sentenc'd to dig in the mine?

Wrote by a TRAVELLER, on the
Window of a Thatched Cot.

STAY traveller, and tho' within
Nought gold nor gems nor games are seen,
To strike the ravish'd eye;

Yet enter, and thy well-pleas'd mind
Beneath this humble roof shall find,
What gold can never buy.

Within this solitary cell, [dwell,
Calm thought, and sweet contentment
Parents of bliss sincere:

Peace spreads around her balmy wings,
And banish'd from the courts of kings,
Has fix'd her mansion here,



T H E

FARMER'S MAGAZINE.



*A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]*

American Husbandry.

NEW ENGLAND.

ALTHOUGH it is more than probable, that this country was first discovered by Sebastian Cabot, yet we have no particular account of it till 1602, when Gesnold made a voyage to that province from a hint he had received from Sir Francis Drake:—He made a settlement, and the Europeans began a kind of commerce with the natives, whom they found a hospitable, inoffensive people; in general they were dressed with deer-skins about their shoulders, and seal-skins round their waists; their hair was long, and tied up in a knot behind: The trade was so profitable in furs, skins, and sweetwood, which they exchanged for toys, that some merchants obtained a grant from James the 1st to plant where they should see fit; but though this might prove advantageous to individuals, yet it by no means answered in the whole; and at last, it owed its settlement to the noblest of all principles, a disdain of civil and ecclesiastical tyranny, in the reigns of James and Charles the 1st; from which time it has gradually flourished more and more. This province lies between forty-one and forty-five degrees of north latitude, is about three hundred miles in length, and two hundred in breadth, and is divided into four provinces, viz. New-Hampshire, to the north, Massachusetts, in the middle, Rhode-Island, to the south, and Connecticut, to the west; all which provinces are supposed to contain upwards of 600,000 inhabitants, whites, blacks, and Indians.

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Though

Though situated several degrees more southwardly than we are in England, yet do the winters there begin earlier and last longer; the winds are very boisterous, and the cold much more severe. The summers are very hot, much more so, than in countries which lie in the same degrees of latitude in Europe; the changes from winter to summer, and from summer to winter, are sudden, without the gradation we find in Great-Britain; and the sky is generally serene and clear.

The soil is various, and well diversified with arable, meadow, and pasture lands; near the sea-coast the land is generally low, but in the interior country rises into hills, and is in some parts rocky and mountainous; round Massachusetts-Bay it is as good and rich as in any parts of Old-England. The upland and northern parts are not so fruitful, though they will all produce good corn, especially maize, which is a native of the country, and was the only corn known to the natives before they were visited by the Europeans. It is called by the natives Weachin, and is thus described:—The ear is a span long, composed of eight or more rows of grain, according to the quality of the soil, and about thirty grains in a row; so that each ear at a medium produces about two hundred and forty grains, which is an astonishing increase; it is of various colours, red, white, yellow, black, green, &c. and the diversity frequently appears, not only in the same field, but in the very same ear of corn, though white and yellow be the most common; strong thick husks shield the tender ear from cold and storms, and in many of the provinces in North America the stalk grows seven or eight feet high, and proportionably strong, and thick; it is observable, that the maize dwindles, the farther you advance to the northward, whence it appears, that warm climates are more congenial to its nature; and indeed its luxuriance in the hottest climes on the coast of Africa, sufficiently evinces the Indian corn to be a native of the more southern latitudes. The stalk is jointed like a cane, and is supplied with a juice as sweet as that of the sugar cane; but from the experiments that have been made, it appears to be incapable of being rendered useful in that respect. Every joint is marked with a long leaf or flag, and at the top shoots a branch of flowers like rye blossoms; the usual time of sowing, or as it is here called of planting, is from the middle of April to the middle of May; but in the northern countries the corn is not put in the ground before June, yet the harvest is ripe in due season, owing to the extreme warmth of the summer months. This corn the Indians boil till it is tender, and eat with fish, fowl, or flesh, as bread; sometimes

Sometimes they bruise it in mortars, and then boil it, but the most usual method is to dry the corn high without burning, to sift and beat it in mortars into fine meal, which the Indians either eat dry or mixed with water; the English bake it into bread in the same manner as flour, but the best food made from it is called *Samsi*, the corn being steeped in water for half an hour, beat in a mortar until it is thoroughly cleared of the husk, then sifted, boiled and eaten with milk, or butter and sugar, like rice, which is not only an agreeable, but a wholesome strengthening diet.

There is nothing more to be observed in the culture, but only to keep it clear from weeds by frequent hoeing; and when the stems are advanced, to draw up the earth in a hill about each plant, which will strengthen them and preserve their roots. When the corn is ripe, they cut off the stalks close to the ground, and after having gathered off the spikes of grain, they spread the stalks in the sun to harden and dry, which they afterwards use, as we do reeds in England, for making fences, covering sheds, &c. Though not a very good bread corn, it is an excellent food for cattle, hogs, and poultry.

Had Mr. Tull, the inventor of the horse-hoeing husbandry, known it, or rather had he lived in a country where it was commonly cultivated, he would have esteemed it particularly as the plant of all others most adapted to that mode of culture; and very many farmers in New-England are got into the method, finding it more expeditious and less expensive.

Wheat is also cultivated in some parts with tolerable success; but not in general, being very subject to be blasted in the ear, not producing so much as might be expected on their best lands. In many parts they have got into the English method of raising clover, which has in general answered extremely well; making not only a good season for corn, but producing plenty of good hay and pasture for their cattle; they let the clover-ley abide, as long as it will bear, and then plough it up and sow it with wheat, or else with pease, and then with wheat after pease.

Barley and oats are also cultivated, but not with success, which perhaps may be as much owing to management as the fault of the land.

They have all kinds of excellent plants and pulse, pease, beans, &c. Flax they also raise with good success, and annually export considerable quantities of the seed. They are likewise getting apace into the turnip husbandry with success; and we make no doubt in a few years, if they had peace at home, allowing them to cultivate their lands properly, but

would soon rival their mother country in every branch of husbandry, which it must certainly be for their mutual interests to encourage.

Apples may be mentioned as an article of culture throughout New-England, for there is no farmer, or even cottager, without a large orchard; some of them of such extent, that they make three or four hundred hogheads of cyder a man, besides exporting immense quantities of apples from all parts of the province; the orchards in New-England are reckoned as profitable as any other part of the plantation.

A large portion of every farm in New-England, consists of meadow and pasture land, wherein it much resembles the better parts of the mother country; in the low lands the meadows are rich, yielding large quantities of hay, which though apparently coarse, is yet much liked by all cattle: The common herbage of many of these is a grass which has made much noise in England under the name of Timothy Grass; two or three tons of hay an acre are not an uncommon produce in these meadows; the farmers find great advantage in keeping a large part of their farms for pasturage, as they are thereby enabled to support large herds of cattle, and flocks of sheep, which much improve their farms.

The horned cattle in New-England are very numerous, and some of them very large, oxen having been killed of eighteen hundred weight. Hogs also are numerous and particularly excellent; some are so large as to weigh eighteen score; the horses are small, but extremely hardy; they have also a great number of sheep and of a very good kind; but the wool, though of a staple sufficiently long, is not near so fine as that of England; they however manufacture a great deal of it with success; elks, deer, hares, rabbits, squirrels, beavers, otters, bears, monkeys, martins, racoons, wolves, foxes, ounces, and a variety of other wild and tame animals, the light grey moose, and the large black moose; the former often herd thirty or more together, is a very fine animal, and resembles the ordinary deer; the latter, or black moose, is described to be a very stately creature, about twelve feet high, his body is about the size of a bull, his neck resembles a stag, and his flesh is extremely grateful; the horns when full grown, are about four or five feet from the head to the tip, where they spread twelve feet and have shoots or branches to each horn, which spread about six feet; when he passes through a wood or thicket, he lays his horns on his back, in order to prevent their being entangled in the boughs; these prodigious horns he sheds every year; he does not spring or rise
like

like the common deer in going, but one of the largest size has been seen in his common walk to step over a gate five feet high, when roused.

Few countries abound more with fowls, as turkies, geese, partridges, ducks, widgeons, dappers, swans, heathcocks, herons, storks, black-birds, all sorts of barn-door fowls, vast flights of pigeons, ravens, crows, &c. among a vast variety of reptiles, rattle-snakes, toads, and frogs, abound in the uncleared parts of the province.

[Such is the moose deer as described, but after all, the account borders too much on the marvellous, and we are apt to think his size has been exaggerated too much; though that there really was such an animal there is no doubt.]

New-England abounds in excellent timbers, oak, ash, pine, fir, cedar, elm, cypress, beech, walnut, chesnut, hazel, sassafras, sumach, and other woods used in dying, or tanning leather, carpenters work, and ship building; yet such was the destruction made in the forests, that a law passed to prevent the waste of woods, by inflicting penalties on those who cut down trees of a certain kind, before they were arrived at a specified growth and age: The pines are equal to those of Norway in growth and straitness: The oak, indeed, is reported to be inferior in quality to that of England; but as the forests of Great-Britain are on the decline, it is certainly politic to be careful of this valuable commodity. The seas round New-England, as well as its rivers, abound with most of the fish that are common in Europe; and even whales, we are told, were formerly taken between New-England, and New-York; they are of several kinds, viz. the whale-bone whale, the spermaceti whale, which yields ambergrease, the fin-backed whale, the scrag whale, and the bunch whale, and each species has a separate property; those whales are said to have something remarkable in their manner of generation, and the female is supposed to go with her young nine or ten months, but to be pregnant only every other year: The sagacity and affection of these animals in nourishing and bringing up their young, is incredible. The bone of the New-England whale is however too brittle, and not so serviceable as that of Greenland. A terrible creature called the whale-killer, which is from twenty to thirty feet long, with strong teeth and jaws, persecutes the whale in these seas, but, afraid of his monstrous strength, they seldom attack a full grown whale, or indeed a young one, but in companies of ten or twelve.

Trade

Trade, navigation, fisheries, increasing population, with other causes, have operated strongly to raise the value of all the estates under cultivation, whose situation is favourable; for in proportion, as the wild country is taken up, good lands and convenient situations rise in value, till we see them come, near great towns, to as high value as in Great-Britain, for near Boston there are lands worth twenty shillings per acre. Another circumstance, in which the farmers of New-England have a great advantage is, their being exempted from tithes, or rates for the support of the poor, which in Britain make a vast deduction from the profits of a farm.

The farmers of New-England are in general a very happy people, enjoying many of the necessities of life on their own farms, and what they do not so produce, they acquire by the surplus of their products; having all the necessities, but few of the luxuries of life; their farms yield food, much of clothing, most of the articles of building, and with the overplus of these they supply their other wants; so as to make life pass away comfortably, and resemble the ancient little freehold farmers, of which this nation could formerly boast; but which taxes and tithes, rates and repairs, have almost driven from our part of the world; while in America they flourish as much as such a set of men can flourish.

The price of labour in New-England is very high, which makes it better for the lower class of people, and prevents the burthen of the poor so grievously felt with us; and having no poor laws to find a constant revenue of subsistence, each individual endeavours to provide for himself.

[To be continued.]

ART. II. *Dissertation on the Winds. Continued.*

IF the Spring of the air be weakened in any one fixed place more than in the adjoining places, a wind will blow through that place where the diminution is: For since the air endeavours continually by its elastic force, to expand itself every way, if that force be less in one place than in another, the less elastic air will be driven out of its place, and that which is more elastic will succeed. Hence, since the Spring of the air increases, as the compressing weight increases, and compressed air is denser than air less compressed, all winds blow into a rarer air, out of a place filled with a denser. It therefore follows, that an extraordinary lightness of the air in any place,

place, must necessarily be attended with extraordinary winds, and storms.

Any extraordinary fall of mercury in the barometer shews an extraordinary lightness of the atmosphere; therefore, it generally foretels storms. Most caves are found to emit wind, either more or less; for the sun's power in rarifying the external air, must necessarily have a great influence in the generation of winds. Wind being only air in motion, and air a fluid, subject to the laws of other fluids, its force may be brought to a precise computation.

Winds are either constant or variable. The constant winds are up and down always at a certain time of the year, and in certain parts of the world; but the variable cannot be reduced to any rule. The constant and periodical winds are only in the widest seas; as in the Atlantic and Ethiopic oceans, between the Tropicks, there is generally an easterly wind all the year long, without any considerable variation: All along the coast of Guinea, for 500 leagues, the southerly and south-west winds are perpetual. In the Indian ocean, the winds are partly general, and partly periodical; that is, they blow one way half the year, and from the opposite points the other half: This, however relates only to the sea winds at some distance from land; for on land, and near the shores, the land and sea breezes blow in all directions, as they are affected by the situation of mountains, vallies, and woods; and, from the various texture of the soil, are more or less capable of retaining or reflecting heat, or of exhaling or condensing vapours.

Of variable winds, some are common to all countries, others are peculiar to particular parts. Of the latter are hurricanes, which chiefly infest the Caribbee islands. Their fury is so great, that they throw down all before them; and blow in gusts, which suddenly rise and fall, but seldom extend very wide. Their duration is never long; sometimes only a few hours. They are more common in America than elsewhere; but Europe and Asia are not wholly without them.

The causes of tempests, and hurricanes, are hardly to be accounted for in all particulars; yet some idea may be given of their rise and progress: suppose, for example, a wind from some point between north and east carries a large collection of vapours out of Africa to the Caribbee islands, this wind lights on the continent of America; now it is possible, that not only the mountains and woods of Panama may resist the current of this wind, and crowd the vapours together there, but a contrary wind, from a point between south and west, may blow at the same time on the western shore of America,

merica, which shall force the vapours back again. When such a rencounter happens, there must be a wild uproar in the air about the Caribbee islands, and in all that tract between South and North America; and the vapours in this circular motion must needs be very furious on all sides. The confluence of two rapid rivers may tend to elucidate this subject: If their currents are rapid at the place where they fall in, they cause violent eddies, whirl things about that are thrown into them, swallowing them up for a little time, and then casting them out again. This shews us the reason why heavy bodies are often tossed in the air by the whirling of hurricanes, and then dashed to the ground again. For the air, being in a circular motion, is with great fury tossed backwards and forwards between the earth and the clouds. For as the waters of the rolling sea do not run to the shores with an even stream, but in waves that dash by fits and turns; so the course of a violent wind is in broken and distinct blasts. Such tempests, however, do not extend very far, because the neighbouring air yielding to their force, they spend themselves in the progress of their motion.

[To be continued.]

ART. III. *Observations on the Quality and Growth of Wooll, as it relates to the Food of Sheep, or Climate in which they are bred.*

SUCH is the great importance of the woollen manufactory to these kingdoms; that every discovery tending to improve the growth of sheep, or the quality of their wool will give pleasure to individuals, while it enriches the state. We are therefore disposed to present our readers with the following observations and enquiries; wishing that any of our ingenious correspondents who are well acquainted with the subject, would favour us with such remarks as may tend to elucidate the subject.

Our first enquiry shall be, does the nature of the climate alter the quality or texture of sheep's wool? and 2dly, if it does, what are the changes produced thereby?

It is in general, thought, that fine wool can be produced only in mild climates, rather on the warm side of temperate; but we apprehend this to be a vulgar notion, when we consider the qualities of vegetable food, and compare the wool produced in England with that of Spain and other hot climates. Notwithstanding the great difference of climate between Spain
and

and England, the latter in some of its counties produces wool nearly equal to that of the former. The wool in divers parts of Norfolk, Wiltshire, and Herefordshire, is as fine, and that of Lincolnshire and Rutlandshire nearly as long in staple, as that of Spain. The best wool this country produces comes from sheep fed on open downs, or low marshy lands; both of which are much colder than many of the inclosed counties, where the wool is not of half the value. This leads us to think that it is rather the quality of the herbage and grass, than the warmth of the climate, that causes this disparity in value; and we are the more confirmed in this opinion, by the change of wool in the very same sheep when their food is changed. A flock of Norfolk sheep, brought into the rich warm inclosures of Essex, or Hertfordshire, will not retain the quality of their wool one year; and the longer they are kept there the worse it grows. We apprehend the reason is, that their food being more rank, and sour, yields juices of a different nature and texture.

Certain it is, that the countries which produce the finest wool do not always afford the richest pastures. Neither the mountains of Persia, or Spain, produce grass nearly so rich as many parts of England that afford wool of a far inferior quality. In England neither the downs about Thetford in Norfolk, Salisbury, and Marlborough; nor the pastures of Cotswold and Leominster, have any thing peculiar to them, that is not to be found in many other parts of this island; and yet the wool of these places has been long distinguished for its superior quality above that of other parts of the country. Some have been of opinion that improvements by clover, and other artificial grasses, tend to improve the quality of this commodity: but altho' these grasses have been pretty common here for near a century, we have no reason to think that the quality of our wool has been improved since their introduction.

In some instances we find that richness of pasture does not debate the quality of the fleece: the sheep of Lincolnshire, Romney marsh, and the Isle of Wight, which feed on rich deep grass, yield fleeces of a fine quality for length of staple especially: but this is not generally the case; for the fine sheep of Buckinghamshire, which feed on pasture equally rich, always afford wool of a much coarser quality. But whatever effect the nature of the pasture may have in altering the fineness of the wool, a full quantity of food is necessary to give it strength and firmness. A very lean sheep was never known to yield a fleece of the very best quality.

The French have of late bestowed a particular degree of attention to their woollen manufactures, and spared no pains to meliorate their wool, and improve their breed of sheep. By an experiment conducted under the direction of the intendant of Normandy with this view, it appears that sheep, which are kept all the year in the open air, yield fleeces about one fourth part more weighty than the same kind of sheep kept at night, and in bad weather under a covered fold: and the wool of the first was also of a much better quality in every respect.

We have sometimes been ready to enquire whether the quantity or quality of the wool could be improved, or debased, by applying any particular substances to the skin of the animal while the wool is growing? In every sheep country there are many nostrums and recipes, handed about, which are believed to improve the wool: But from the best information we have been able to collect, they have been useless. A judicious experimental philosopher, however, who would investigate this matter in a proper manner, by decisive experiments, would do an essential favour to his country. We are therefore very solicitous that some intelligent public-spirited gentlemen should turn their attention this way; especially as there is great reason to suspect, that the quality of our wool is growing worse, while that of our neighbours on the continent has been greatly improved.

PASTOR.

ART. IV. *General Observations on different sorts of Grain.*

To the EDITOR of the FARMER'S MAGAZINE.

SIR,

I Am disposed to present you with the following observations on the different sorts of grain; which if you think merit the notice of your readers, you are at liberty to make public.

In springs that prove very dry till June, all sorts of grain late sowed will not seed well: For, in the hill countries especially, the oats and barley, sowed early, grow little till the rain fall, and have generally short ears: Such being the nature of the land that it will not bring on the corn fast enough; though the summer afterwards prove rainy. But in very rich lands this effect is not quite so apparent.

On the contrary, in cold wet spring seasons, when there is no warm weather till May, the wheat will not multiply its shoots; but the winter spindle will run up singly. The winter stalk being hardened will keep growing; whereas, to form collateral

lateral buds and branches which are very tender, mild warm weather is requisite, but without hot gloomy rains: When the flush of sap is rendered impetuous by gloomy heat, it rises so fast up into the first maiden stalk, that it stops not to throw out side shoots.

The great fertility of some hot countries shews that no climate can be too hot for lands that are very rich and fertile. Our clays and mixed earths, that want the impregnating heat of the sun, are often burnt up, and incrustated with that heat; but this is not the case with lands that are naturally rich, moist, and mellow: The moisture will occasion the grain to shoot as soon as it is sown; and when it once grows, it is not easily checked by drought. Wheat and Vetches will do much better in a dry summer, than pease, barley, and oats; the former being well established in the root during winter.

Rain in May is most unseasonable on summer corn: a wet May generally produces a bad crop of barley; for much rain in that month often kills it, or makes it turn yellow, which shews that it is starved. In the fore part and middle of May the leaves of the barley begin to die, having till that time been principally nourished by the milk and flour of the corn; but then it begins to put forth new roots and leaves, and to draw its nourishment wholly from the root. At this crisis it receives a check let the weather prove ever so good; but if it proves wet and cold, the barley will be so stunted that it cannot recover; for after such rains the heat of the sun, having baked the surface of the ground, does thereby so bind it, that the warm rays cannot penetrate to the roots of the corn, which will lie all summer in a cold bed. A cold and dry May never hurts it.

A wet May does not injure wheat any other way than by making it weedy. The success of wheat depends much on a good season for sowing it. From constant experience I find that in cold wet seasons, the straw of all sorts of grain is weak and thin: On the other hand, in dry hot summers, it is thick and strong, and has more nutritive juice in it; which is the reason why, in hotter countries, the cattle eat straw so much better than with us, and almost as well as hay.

The colour of wheat and barley is an object of great consequence to the farmer in a market; and does not a little puzzle the inquisitive gentleman who is a stranger to husbandry: the reason for this is, there is a uniformity between the colour of corn and its weight: that which is heaviest is the best coloured. Wheat weighs light because it has not come to its full maturity, nor sufficiently discharged the watery parts, which chiefly
proceed

proceed from the coldness of the ground, which prevented the grain from ripening fully: The defect of colour may be occasioned also by too much rain in harvest: for every time the grain is dried, after being wet, when fully ripe, the moisture exhaled by the sun carries away a tincture of its colour; and consequently the kernels will be more porous, and therefore lighter; the same will hold of barley.

All corn is apt to grow brighter as it approaches towards earing; but that which then retains most of the deep green colour is most likely to have the largest ears, and to bring the grain best to perfection.

Rain is of prejudice to all sorts of grain in the blooming time; the reason is, that the husk of wheat, barley, and oats, opening then, is corrupted by the wet standing in it; and the rain also washes off the farina, or dust of the flower which impregnates it.

The whiter wheat, barley, and white oats, or the hoods of black oats, look as they ripen, and when ripe, the better is the corn; and on the contrary, the coarser and more blighted.

When September comes, the nights are generally frosty in hilly countries; and the farmers in such places entertain an opinion that the corn then ripens as fast by night as by day: But the less it is thus ripened the better; for such ripening may be more properly called blighting; for these frosty nights rather shrink and dry up the grain. In like manner many sorts of fruit may be said to be ripened by frost, because they precipitate to rottenness: But such blighted, or frost-bitten barley, not arrived to its natural ripeness, cannot yield so good flour as that which is thoroughly ripened by the sun, nor can it be so profitable for malting, although it may possibly be as full grained as kindly-ripened corn.

I am, your constant reader,

A WARWICKSHIRE FARMER.

ART. V. *Explanatory References to the Jointed Horse-Rake.*

[Illustrated with an accurate Copper-plate Engraving.]

THE wheel in front prevents the teeth from dipping too deep into the ground, upon any sudden obstruction; by means of the sweep bar, the front rake is raised higher or lower, made use of or not, as occasion requires.

For couch harrowing, the front rake should be drop'd down, that the points of the teeth may be level with the teeth of the hind rake; and the teeth of one rake being opposite the space

of

of the other, the roots of the couch grass cannot easily escape. — When it is used for gathering stubble, grass, &c. into heaps, the front rake should be thrown up, and fixed by the pin in the sweep bar; and when a sufficient heap is collected before the hind rake, it must be lifted up by the handles, and the heap will remain ready for burning, or carrying away, as may be necessary.

Others are made with a wheel at each end of the hind bar, for the purpose of hay raking, or collecting leaves or twigs from gravel or grass walks, at the latter end of the year; the rake-teeth being set as near the ground (but not to touch) as the user pleases; this is a very expeditious method of cleaning lawns or bowling-greens, but for the latter purposes, the strength of man is sufficient to draw or push it.

MAY 3, 1777.

JAMES SHARP.

ART. V. *Epitome of a French Farm.*

Mr. SYLVAN,

HAVING lately read a work, intitled *Travels thro' France*, which abounds with useful observations on the state of agriculture in that country, I have made a few extracts for your useful Magazine; which I apprehend will give pleasure to many of your readers,

and am, your very humble servant,

A LOVER OF AGRICULTURE.

“ — The town of Berlise stands on a hill in the middle of an open corn country, in which there is not a hedge to be seen. In all these fields, the universal practice is, to fallow their lands three times for wheat, of which they get about two quarters an acre: If they manure, they have two and a half, or three. After wheat they sow barley, of which they get but indifferent crops; and then they fallow again as before. The farmers pay about six shillings an acre for their arable land; which is so good in its nature, that it would let in England, if inclosed, at twenty. Yet the farmers here are very poor, and shew it in every thing belonging to them. They have a practice of keeping their seed wheat in lees drawn from the dung of poultry. They plough the land and then harrow in the seed with harrows, the teeth of which are made with wood to save iron; and projecting from the frame on both sides they can turn the harrow, and wear up both.

From

From Berlife I took the road to Merchingen, through an almost continued corn field; the soil rich, and the roads very deep and bad: The peasants were sowing wheat; and from the stubbles of the last year, the preceding crop seems to have been very good; but the barley stubbles had but a bad appearance. The people, however, complained much of the badness of the crops—I asked them if the price was not proportionate—They replied no, not by any means—That the poor peasants grew every year poorer and poorer; nor could they afford to cultivate their lands to any good purpose. Some of the farms here amounted to five hundred acres, but the occupiers are generally in bad circumstances; and the little towns I passed through, poor, and some of them almost uninhabited. This is, notwithstanding, a fine rich country, which under a favourable government, like that of England, with circumstances encouraging to husbandry, would be very wealthy: But the natural richness of the soil seems to have produced indolence in the people.

One farmer, whom I met with on the road, gave me the following description of his farm, which I think well worth inserting, as those acquainted with the state of husbandry in England may find some advantage in comparing the circumstances.

He has 432 acres; of which 416 are open field arable land, sixteen are grafs inclosure; and he has liberty of turning what cattle he pleases upon some considerable commons near his farm; his house is a very good one; and for the whole he pays an annual rent of 147*l*. The land is in general good and loamy; all the arable is in the common management of his neighbours; that is, first making a summer fallow of three ploughings, upon which they sow wheat. His product varies between two quarters, and three and a half per acre; but the latter only in very favourable years. He lays all his manure on for wheat. Upon my asking what increase of product that occasioned, he replied, but little; in some years none; but that he had used wood ashes to better advantage; which, sown over the green wheat in spring, he found to be better than dung in autumn. The dung is raised by his teams of oxen while they are eating the straw of the crop.—Of these oxen he has thirty-two, also five cows, and about twenty young beasts of different sorts, which through the summer are fed on the common—and in the severe weather in winter they are taken into the farm-yard. Besides this stock he has generally two hundred sheep of a small kind; which go the whole year on the commons, but are regularly folded on the wheat fallow.

This

This manure he finds much superior to other dung. A team of four oxen yield a yearly profit of 3l. besides their food; so that he reckoned his ploughing to cost him no more than the labour, the use of the plough, and that of the harness; whereas if he used horses, he should lose considerably every year by the decay of their value, instead of gaining by their growth.

The ox teams he keeps two years; and then sells them to the graziers, taking from their stock of young cattle fresh ones to supply their place. He further told me that a cow yielded per annum, in milk, cheese, butter, and a calf, about 2l. 10s. profit; but this small amount must be owing to their being so poorly fed on the commons; and in winter he could spare but little hay for them, his sixteen acres of grass being poor land, and when mown not producing more than twelve cart loads of hay. He owned that cows upon the grass farms by the sides of rivers yielded sometimes double that sum.

The young cattle paid him no other profit than supplying his teams and his dairy; and even for this purpose he bought every year some weaned calves. His barley yields about two and a half quarters per acre, one year with another. His annual sales amount as follows:

	£.	s.	d.
Wheat	440	0	0
Barley fold	280	0	0
Cows fold from dairy	10	0	0
Swine fold	20	0	0
Sheep	15	0	0
			£765 0 0
His general expences are,			
Rent	147	0	0
Taxes	180	0	0
Labour	210	0	0
Sundry expences	160	0	0
			697 0 0
			Nett Profit 68 0 0

This is all, besides the poor living which he and his family get out of the crops, that he can possibly lay up at the year's end. And if against this, he sets the interest which he pays for a part of his capital, the purchase of cloaths, and pocket expences, it is evident, he is but a small remove from ruin: Yet this

this man was chearful, and did not seem to fear bad luck. The price of his labour was as follows: A man in summer, twelve-pence, in winter, nine-pence a day. A woman in harvest and vintage, four-pence; in winter, three-pence: Girls and boys in proportion. A man-servant in the house for husbandry-work, 4l.; a maid-servant, 2l.; which is much lower than they now are any where in England."

ART. VII. *An approved Receipt to prevent Cheese from proving rotten.*

WHEN the curd is fit to break up, take out one quart of the whey and heat boiling hot; when the cheese is ready to put into the press, pour the boiling whey over it, and press it as usual.

A Norfolk dairy woman used this method for thirty years, and never had a decayed cheese.

ART. VIII. *Observations on Feeding Farm Cattle with Green Food.*

[Extracted and abridged from Lord Kaimes' Gentleman Farmer.]

SEVERAL plants serve for this purpose: saintfoin, lucerne, red and white clover, and rye-grass. Saintfoin and lucerne cut early are excellent food; but when they turn strong and reedy, horses are not fond of them. Red clover is the best. The disadvantage of white clover and rye-grass is, that being small plants they are difficult to be collected in heaps for food. Red clover is extremely luxuriant, and easily collected. It flowers the first week in June; and in a rich soil it will rise to eighteen inches before flowering. In a good soil it may be cut three times in a year; and afford some pasture afterwards. It should be cut in the morning when moist with dew, being more palatable then, than if cut dry. Cut it before flowering, that it may grow the faster for a second cutting. These considerations are not sufficiently attended to. A horse works as he is fed: it is surprizing what work he will perform when fed on cut clover, without losing flesh. Many a summer, for seven or eight weeks together, my horses have been daily employed in bringing lime fifteen miles distant, and fed on red clover only; yet at the end of the season they have been as plump and hearty as at the beginning.

But

But a skilful farmer will not confine his cattle to red clover for summer food. There are other grasses that spring more early and grow late: rye-grass, ribwort, and yellow clover, are ready for cutting the middle of May; and may be cut a fortnight after red clover is gone. To enlarge the period of green food for cattle is a desirable object in husbandry: It saves pasture fields till the grass covers the ground, which retains the dew, and shelters the grass roots from withering winds. Sow part of the field with rye-grass, ribwort, and yellow clover mixed. These plants may be cut in the middle of May; and if the season prove favourable, again as late as the middle of November. Cut grass is the cheapest of all food; and the most agreeable to horses; for however nourishing dry food may be, yet a horse put upon green food is more agile and plump.

I proceed to the summer food of horned cattle: A beast that chews the cud takes in at once a large quantity of green food; especially of red clover, which when young is very palatable. So large a quantity is apt to ferment with the heat of the stomach; and sometimes makes the creature burst. This is a reason why they are sparingly fed with clover: but this is easily obviated by feeding them in the house, or yard,† instead of the field; and red clover should always be cut for food; for where cattle are pastured upon it, more is trodden down and spoiled than is eaten. But bursting may be prevented even when cattle are allowed to pasture; let them only an hour or so, when the clover is dry and there will be no hazard. Red clover cut green is preferable to all other food for milch cows: being soon filled, they have much time to rest, which increases their milk. The milk is richer also, and higher coloured than from any other food. Red clover is good food for sheep; but the cutting it would be too expensive. White clover is their favourite, and grows naturally in a good soil.

A signal advantage arises from feeding horses and horned cattle in the house during summer—they can fill their bellies with cut grasses in an hour; and are protected from heat and insects. The dung turns to far better account than when scattered during summer in pasture. Horse dung in a field is totally lost; it first burns the grass it falls on, and then dries away to a chaffy substance; its salts being all evaporated by the sun, in a few hours.

Vol. II. **S** **When**
† This will not always obviate the danger, the reviewer of this article having seen a fatal blowing ensue from a cow's eating clover in the yard.

When cattle are fed in the field, white clover is the best and most grateful food: being a native of Britain, it propagates itself by spreading along the surface, and taking root at every joint: but as this is a work of time, it is best to stock the field with it at once. Thirty pounds* of good seed that is weighty, full, and without dimples, is requisite for an acre. The seed will appear red when injured in drying. A field intended for pasture requires a mixture of grasses. Every species of animals has its favourite grass; and when they feed together, not a stem is left.

Different grasses having different times of flowering, there is a succession of food during the whole season. The proper quantity of seed for an acre intended for immediate pasture, is ten pounds of white clover, five pounds of yellow clover, two pounds of ribbed grass, and twelve pounds of ryegrass. A field intended for pasture, should be well aired, well watered, well sheltered, and the larger the better; good air makes cattle feed kindly—in hot weather they go to the highest part for fresh air; but if they want these, they fret, and lose flesh. Shelter is necessary against heat, but more so against cold. If the field is large, some clumps of trees should be scattered through it. Narrow bounds is a kind of imprisonment which cattle do not like. A range of 50 or 60 acres is best for horses—thirty will do for horned cattle. If pasture fields are small, and surrounded with high rows of trees, the cattle are stifled for want of fresh air in summer, and pestered with insects and flies. In winter such small inclosures retain the damp foggy air, and are much colder than the open fields.

ART. IX. *The Natural History and Cultivation of BUCK-WHEAT.*

THE buck-wheat (or *Fagopyrum*) is an upright plant from two to three feet high, dividing towards the top into several branches. It has a firm and round stalk; the leaves are broad, pointed at the end, and of a pale green colour, sometimes a little yellowish. The flowers stand in large tufts on the tops of the branches, they are small and white, and the seeds are triangular, brown without side, but with a white kernel within. In the cup of the flower are eight little red-fish numps which contain a sweetish juice. These form what is called the nectarium of the flower. In the centre arises

* This is a large quantity indeed.

eight slender threads, with little buttons at their ends; among these stand the rudiments of the seed. One seed follows every flower, which serves it for a covering, growing dry and clinging round it without falling. This plant is a native of the East, and in some countries it is used for making bread.

Buck wheat will grow on the most barren lands, and this is one of its great uses to the farmer: On healthy ground, naked gravel, or, in the stone countries, on those lands where chips and fragments of stone cover the surface, it will grow very well.

The fairest and soundest seed, dry, and of a bright colour, is the best. The quantity sown is very different, according to the design of sowing: When it is to be raised for seed, a bushel on an acre is sufficient, as only a small number of plants well nourished is best; but when sown only to be ploughed in as a manure, its value is proportioned to the quantity of the herbage. When raised by way of preparation for another crop, four bushels are not too much. It should be sown the beginning of May, or rather later;—it will do at the latter end. Being a native of warm climates, it will not bear cold—It grows quick, and will ripen during the summer. After it is in the ground, no particular care of it is necessary. Slight ploughing and harrowing will cover it, and let the weather be wet or dry, it comes up nearly at the same time.

When once up, it grows fast (and keeps down the weeds) till the time of flowering. A very considerable use attending this grain is, its being such good food for cattle.—This is the more important, because it comes at a time when provender is scarce, the grass being burnt up by the heat, and horned cattle being then generally in want of good fresh food. When coming into blossom cows are very fond of it. It affords excellent nourishment, rich and wholesome, producing a great quantity of milk, without any disagreeable taste. There is no better butter, or cheese, than that made of the milk of the cows which are fed with it.

If the crop is intended for this use it must be sown thicker than for seed, but not so thick as for plowing in: Two bushels and a half on an acre is sufficient for this purpose.

After the cows have eaten it down, the stubble may be ploughed in, and the land will do well for a crop of rye. When a large full grown crop is ploughed in, it heats and enriches the land, and a very good crop of wheat will succeed it; but in this case it should be ploughed in when full

in flower before the seed is formed; it being then in the richest state for manure.

When sown for seed, the farmer should watch his time and cut it when fully ripe, before any is fallen.

The way of gathering it is by mowing,—and when cut, it should lie some days in the air before it is housed: There is no great danger of accidents, for no grain is so hardy. When the stalks are grown limber, and the grain firm, it should be carried in and thrashed. The increase is very great. Fifty bushels may be had from an acre of very moderate land; and much more from that which is rich. The uses of the seed are many. It is excellent food for hogs and poultry.—They are fond of it, and fatten well upon it.—Mixed with oats it is a thriving food for horses, but should first be broken in a mill. Cattle will also eat the straw. This plant is highly esteemed by the Norfolk farmers.

ART. X. *A method to secure Garden Crops, Corn, &c. from Sparrows, and other birds,*

Communicated by the late JOHN ELLIS, Esq.

TAKE of hog's lard and flour of brimstone, such proportionate quantities as will make a thin liquid ointment when warmed over the fire in an earthen pot; add to this mixture as much assafoetida as will give the whole a very strong smell. Large feathers, (as those of turkeys, &c.) well besmeared with this thin ointment, and fastened on strings, to be hung round the crops of pease, plants left to perfect their seeds, growing corn, barns, corn ricks, &c. will keep off the birds.

ART. XI. *A method of preparing a very useful Liquid Manure for Gardens.*

PUT up a full bushel of fresh pigeons' dung in an old bag, and immerse this in a hoghead of soft water; move the bag in the water very much every day for a week, when it will be fit for use. It must be given to the flowers, plants, &c. as common water, only taking care that it is applied to the roots only, and not suffered to fall on the leaves and stems of the plants. The pigeons dung will impregnate a second hoghead of water.

N. B. It is supposed this liquid manure may be applied with great advantage, to promote the early vegetation of the seeds of onions, carrots, cabbages, &c.

ART.

ART. XII. *A Specific for inward or outward Piles.*

POWDER'D senna, flour of brimstone; powder'd crabs eyes, of each one ounce; best honey, eight ounces; two large nutmegs grated fine; and one spoonful of the best oil; make these ingredients into an electuary, and take about the size of a walnut at bed-time.

ART. XIII. *Premiums offered by the York Agriculture Society.*

	£.	s.	d.
1. T O the farmer not renting above 20l. a year, or cottager employed in husbandry, who shall have the most children living on the 1st of March 1778	10	10	0
2. For the second greatest number on the same conditions,	5	5	0
3. For the best crop of potatoes in every respect in the year 1777, on not less than one statute acre of land,	5	5	0
4. For the second best crop on the same quantity,	3	3	0
5. For the best crop on not less than two roods,	4	4	0
6. For the second best crop on the same quantity,	2	2	0
7. And to any person being the occupier, and not renting above 6l. a year in house and land, who shall produce the best crop of potatoes, on not less than one rood,	3	3	0
8. For the second best crop on the same conditions,	1	11	6
9. For the best crop of carrots in every respect in the same year, on not less than one acre,	5	5	0
10. On not less than two roods,	3	3	0
11. And on not less than one rood,	2	2	0

The candidates intending to offer for the premiums for potatoes and carrots, are to give notice thereof, and of the quantity and situation of the land intended to be cultivated, to the Secretary of this Society, in writing, on or before the 24th day of June next, otherwise their claims will not be allowed.

The land cultivated must lie together in one place, and not be intermixed with any other land belonging to the same candidate, which shall be cultivated with the same crop.

12. To the farmer's man servant who has lived the longest in one place, on the 1st of March, 1778, and been employed in husbandry,	3	0
13. To the maid servant ditto,	2	2 0

Where there shall be no more than one candidate for a premium, the Society reserve to themselves a power of giving nothing, or such part of the premium only as they shall think proper; and no person

is to be intitled to or have more than one premium for the same sort of roots cultivated by him, nor for any crop for which a premium shall have been adjudged, or may be adjudged in the same year, by any other Society.

All persons residing in the city and county of York, may become candidates for the several premiums offered by this Society, unless they are also candidates for the same to any other Society.

WILLIAM DANBY, Esq;

President.

JOHN GRIMSTON,

JARARD STRICKLAND, jun.

Esqrs. Vice-Presidents.

THOMAS PEIRSE,

JOHN RAPER,

Secretary.

ART. XIV. *On the best methods of destroying and preventing Ant-Hills.*

Mr. SYLVAN,

THE great inconvenience, as well as loss, sustained from the hills raised by ants, in grass lands especially, is scarcely to be conceived by any other persons than Farmers. Many remedies have been proposed; but most of them have proved ineffectual when reduced to practice: Such as I have proved and found to be most successful, I shall describe, for the information of your readers, leaving them to follow such as may to them appear most eligible.

Some persons have pretended, that in pasture lands, constantly fed, these hills are not detrimental; nay even that they are serviceable; but this opinion is erroneous. There never was an ant-hill which did not occasion some loss to the farmer; and where there is one, there will soon be more; for ants multiply fast, and in a little time spread over a large spot of ground. The loss sustained by these hills is evident; they cover a considerable surface, and bear very little grass: When long let alone, they increase in size prodigiously, even to a cart load each.

Some farmers cut these hills up in the spring by hand; and where they are not numerous this may answer. It is to be done thus: with a thin iron shovel let the workman cut right down through the middle of the ant-hill; let him then draw it out and make another cross cut. This divides the turf and upper part of the hill into four quarters, which should be turned back, and the earth underneath should be dug out with the nest of ants in it. This done turn the four quarters of the turf down again, and it will soon close and grow like the rest.

But

But this method is attended with several disadvantages—frequently a disagreeable hollow is left in the ground—and doubtless some of the ants remain in the turf; these will soon multiply and work again till the hill will soon be as big as before. But another circumstance is, the difficulty of disposing of the body of ants, and the earth taken out of the hole. The old custom was to break the clod and spread it over the land; but this, instead of *destroying*, is only *dispersing* them. At present the farmers about London dig them out, and carry them to their dunghills, where some are destroyed, but enough remain alive to renew the mischief.

But the best and most effectual method of extirpating these vermin, is by an excellent instrument for this purpose called the ant-hill plough; the timber part of which must be elm or ash, and its two sides about five inches square. The iron work must be made thick enough, and well steeled and it is to be drawn by two horses lengthways. This plough properly guided will cut through any depth of earth in these hills; and taking them off entire, they may easily be removed, and the surface will remain even. One advantage this method has above all others, that the few ants left behind are exposed to birds, &c. and are seldom known to increase much afterwards. Hay seeds sown on the naked spots will soon cover them again with grass. The expence is little—a very good plough may be made for two guineas—the price will soon be saved by the quantity of work done: as many hills may be cut down in a day by this instrument, as would employ ten labourers in any other way for a week.

The person who guides this plough may make it cut deeper or shallower at pleasure, by raising or dropping the handle. The hills being thus cut up, it remains to dispose of them in such a manner as to prevent a return of the mischief. Spreading on the ground, or carrying them to the dunghill, will not answer this end. The best method is to build them up in heaps, high and hollow; and when they are dried a little, burn them to ashes. Where there are many hills let them be carried off the field in a cart and burnt; the ashes will make excellent manure for the land; especially for upland pastures. Another method of disposing of these hills, is, to throw them, entire, into a pit of dung, or wet muddy ditch of water. Here the ants will soon be killed, and the earth mixing with the dung makes a good compost. A third method of using these ant-hills with safety, and to the advantage of the ground, is to throw them into a circle of dry lime, and cover them with

with it: the lime soon kills the ants.—This is a safe and expeditious method of extirpating these insidious enemies.

When the farmer sees this practice of cutting up ant-hills entire in its proper light, and reckons up his gains by the practice, he will find, that if the hills have been numerous, in six years time the expence of the plough and all the labour will be above twenty times returned to him at the very lowest estimation.

Having given these hints, as a proof of the estimation in which I hold your very useful publication, I remain

Your very humble servant,

A KENTISH LANDHOLDER.

[We return our thanks to this correspondent; and although we have treated largely on these pernicious insects and the methods to destroy them, [see, in our dictionary, *Ants* and *Ant-Hills*, and p. 9, vol. 1, of the Farmer's Mag.] yet our readers will no doubt be glad of this further information from the ingenious Kentish landholder.]

ART. XV. *Diseases in Cows, continued.* By C. Williamson.

Running of the Nose.

IN cows this is often a troublesome disorder, and requires an early cure, for if suffered to run too long, the discharge becomes corrosive and acrid, and corrodes the fine inner membrane that lines the nostrils; and in all probability is not in this respect unlike the glanders in horses. That fragrant effluvia of a cow's breath, will become tainted, the beast sometimes, though rarely, wax poor and die, being deterred from eating by the disagreeable discharge falling on the food she takes in. We should do right to examine carefully the cause of complaint; if it arise from a cold, it is cured with it; if from an accidental injury, such injury should be enquired into; little insects will not unfrequently teaze and vex the poor animal, and if she be unable to blow them out by sneezing, they will irritate and produce the disorder we are now mentioning; and as the hanging posture of the head tends to increase the disorder, such applications should be made use of as will without irritation cleanse the passages, and destroy the insects; than which nothing is better than a weak solution of sublimate mercury, not more than 5 grains to a quart of rain water; this may be nicely syringed up by means of a vegetable bottle or syringe, it should be used twice a day, and repeated twice or thrice each time. Speaking of the disease as local, no internal medicines are required; and if the attendant or the effect of another disease, it is to be cured as that disease to which it properly belongs,

ART. XVI. *On the Wood proper to be used for Instruments of Husbandry.*

Mr. SYLVAN,

I Have frequently observed, that the implements of husbandry used by Farmers round me, seldom lasted so long as my own, although my business required the latter to be constantly employed in the various branches of agriculture.

This, I apprehend, must proceed from the wood, of which they are made being, either not of a proper kind, or cut and worked up at an improper season. I shall therefore give you, what I have experienced to be, the best direction in these respects.

There is a certain age, at which trees are in perfection for the purposes of a Farm: This age I state at sixty years: Most kinds of trees fit for farm uses are then sufficiently large; being when cut to the square, from twelve to fifteen inches each side. I here except the oak, which improves in goodness as well as size till it is a hundred years old. Every oak, consists of red and white wood; the former is the firmest of all wood (box and yew excepted) the latter only fit for the fire. Ash, after the growth of sixty years turns short and brittle.

The proper season for cutting a tree, is when it has least sap, which is precisely in the middle between the time of shedding the leaf, and that of budding: In that interval it is tough, and fittest for every farm purpose. When cut in the sap, the wood is short and apt to split in hot dry weather.

For preserving wood after being cut, there are three methods: one is, to dry it in the air; another to immerse it in water; and a third to cover it up in horse-dung. Ash, when sawed green never fails to split: Before applying an instrument it ought to be exposed eighteen months in a dry situation, that all the sap may evaporate; during that time, both ends ought to be covered from the air: The bark will prevent the body from splitting; but when the ends are exposed, they will split up into the body five or six inches. When ash is designed for uses that require splitting, let it be split immediately after cutting, and the part laid up, where the air and winds have not free access; in order that they may dry slowly, for sudden drought makes them warp; Oak and elm require the same treatment. The Huntingdon willow, and other willows that grow to a large size, turn extremely tough when dry; and therefore, if intended for planks or boards, they should be sawed directly after being cut: But as in this case they are

apt to split, great care ought to be taken to dry them slowly. Alder, and birch should be managed in the same manner.

The immersing in water, and covering with horse dung, are far from being the best methods of seasoning wood. It is always harder and tougher, when dried slowly in the air. These methods, therefore, ought only to be used for expedition, to extract the sap the more quickly, when the wood is wanted for immediate use.

There is not an instrument of husbandry that consists of several parts, but requires wood of different kinds. Of all wood, oak resists moisture the most; and can best endure the being deprived of air totally. For these reasons, oak is the only wood fit for being mortised into other wood. From the part that is mortised, air is totally excluded: and yet some moisture finds access, being more penetrating than air. Therefore the spokes of a wheel, which are mortised into both the nave and fellies, ought certainly to be of oak; the sheaths of harrows, which bind the parts together should be of the same; as also the head of the chain-plough, because it is mortised into the beam.

As ash is less apt to split than oak, it is the more proper wood of the two, for naves and fellies: as it is toughest of all wood, and the most elastic, it is fittest for the trams of a cart. The best wood for the body of a cart or waggon is the Huntingdon willow: It is both lighter and tougher than even the best red fir. The head of the Scotch plough may be of alder, because it is not mortised into any other part. Whatever the plough is, the mould board may be of willow or alder, because they are lighter and not apt to split.

A roller should be made of beech, being heavy; the sheaths, and pins of oak, and the shafts of ash. The handles of spades, shovels, pick axes, &c. ought undoubtedly to be made of ash; besides its toughness, it is less apt to turn warm in handling than any other wood. For gates, fir* is certainly the best: It is light, it resists moisture; and is not apt to warp.

I am, Sir, your constant reader

A North-Country Farmer.

[We are much obliged to our correspondent for the above letter. Many of his hints are certainly very judicious, particularly that respecting wood for mortising—Some of the rest may possibly be disputed by persons of less experience: and we mean not to preclude any remarks

* Undoubtedly if painted; but every Farmer cannot afford to paint his gates; and without paint we apprehend fir for this purpose would not be very durable.

remarks which other correspondents may think proper to make—on the contrary, we shall be obliged by the free animadversions of any of our readers, who from experience can point out mistakes in any thing we lay before them; as our only wish is to instruct and benefit mankind.]

ART. XVII. *On Blighting Air.*

Mr. SYLVAN,

BLIGHTS, says the learned and ingenious Dr. Hales, are frequently occasioned by a continued dry easterly wind for several days together, without the intervention of showers, or morning dews: By this means the perspiration in the tender blossoms is stopped; so that in a short time their colour is changed, and they wither and decay: And if it so happens that there is a long continuance of the same weather, it equally affects their tender leaves; for their perspiring matter is thereby thickened, and rendered glutinous; closely adhering to the surfaces of the leaves, and becoming a proper nutriment to those small insects, which are always found preying on the leaves and tender branches of fruit-trees whenever this blight happens; but these insects, which are not the first cause of blights, as is imagined by some, although it must be allowed, that, whenever they meet with such proper feed they multiply exceedingly.

The wheat least liable to be hurt by these insects, is the white cone (or bearded) wheat, which has its straw like a rush, not hollow, but full of pith, except near the ground, and there it is very thick and strong. It is probable this kind has sap vessels that lie deeper; so that the young insects cannot totally destroy them, as they do in other wheat: For when the straw has the black spots, which (being the excrement of these young insects) shew they have been bred there, yet the grain is plump, when the grey cone and lammas wheat mixed with it are blighted.

A WILTSHIRE FARMER.

[As blighted crops of corn are very prejudicial to the public; we wish some of our intelligent and experienced Farmers would give us their thoughts freely on the subject; and also point out the best means of prevention or remedy.]

T 2

ART.

To the EDITOR of the FARMER'S MAGAZINE.

SIR,

I have been a Farmer forty years, and therefore you will give me credit for more experimental knowledge than my juniors. Whether this intitles me to commence author I cannot tell; but as I have received some useful instruction from your Magazine, I wish it success; and as a mark of my esteem for it, have sent you a few remarks on the best method of clearing ground of weeds, which you are at liberty to do what you please with: If on reading them you don't think they contain merit enough for the notice of your readers I shall not be offended; but if you insert them I hope they will not disgrace your work; and am,

Your humble servant,

Yorkshire, March 30th.

AN OLD FARMER.

ART. XVIII. *Method to clear Land of Weeds.*

SUMMER fallow is generally reckoned the best method of clearing the ground of weeds; but it is not always effectual. The roots of couch grass, particularly, are long and full of juice: If a single joint be left it springs. Here the common harrow is of little use, its teeth being too wide and too short. The time usually chosen for destroying couch grass is in preparing for barley.* After the harrow has raised part of the root above ground, people are employed to pull it up. Two objections lie against this method: the expence is one; the other is, that after all this expence, many roots are left in the ground; and every root will spring up in summer. I have therefore introduced a new instrument, which I call a Cleaning Harrow, three feet five inches in breadth, the teeth six inches apart, and each tooth nine inches free below the wood, weighing a pound. The rows of teeth four inches asunder. To give this instrument its full effect, I break the large clods with a common harrow† or roller; and use the cleaning harrow in dry weather in May. I place a boy on the horse, he rides with the drags after, which bring the roots to the surface. When the harrow is full he stops, and with a rope fixed to it, raises it from the ground to let the weeds and roots drop: When this is done, they are raked

* Or turnips,—or vetches,—or French wheat,—or complete fallow for wheat.

† Heavy drag harrows.

raked together and carried off in a cart.* Instead of burning them, I lay them in heaps with new dung, where they soon ferment, and make excellent manure. What better method is there than this to make a friend of a foe?† When a field is thus cleaned, the seasons must be very cross, or the Farmer very indolent, to make it needful to renew the experiments for ten or twelve years.‡

Fog is one of the most pernicious weeds that infest grass-fields: In a very dry soil it frequently covers the whole surface: I have tried lime and dung to very little purpose.—Coal-ashes do better; but the fog recovers strength gradually as the ashes lose their virtue. As fog prevails most on dry grounds, the laying the field under water|| for a whole winter will destroy it.

One infallible method there is, viz. to cover the ground an inch thick with soil that will retain the moisture,§ and to mix it with the original earth by the plough and harrow.

I have always found that a quick succession of corn and grass is more profitable, than to continue either singly for many years together on the same land. Therefore when the fog prevails, plough up the ground for corn.

I shall now speak of annual-weeds, which are propagated by seed:—As seeds cannot be gathered out of the ground like roots, the only way of destroying them is to promote their vegetation, which lays them open to be cleared away, by the plough and harrow. For want of industry, annual weeds abound, in the best soils especially. In the beginning of June the fields are covered with charlock, or wild mustard. As these plants ripen, and drop their seeds long before the corn is ripe, they multiply exceedingly; and not only rob the ground, and starve the grain, but prevent circulation of air about the roots, which is necessary for vegetation.

The

* We wish our correspondent to examine well the horse-rake given in this month's Magazine.

† When burnt on the ground, the ashes afford a good manure.

‡ We believe he must be a very active Farmer, indeed, whose lands do not require the same management once in four or five years, if ploughed.

|| As dry lands are generally much higher than rivers, we cannot help wishing our correspondent would inform us in his next, of some easy method of laying them under water all winter.

§ We shall also be obliged to our correspondent to inform us, what soil it is, which being spread only one inch thick, will retain moisture for any considerable time.

The best remedy that I know of, is the following: begin with ploughing in April as soon as the ground is dry,—then let the brake *succeed cross the field, which by thoroughly breaking the soil, will promote the vegetation of every seed. As soon as the weeds appear, which may be in about a fortnight, plough and brake as before: proceed in the same manner, while any weeds remain, and with one summer's labour, the land may be rendered as clean as a garden.

This precaution is however necessary: avoid ploughing or brakeing when the ground is wet; for the stirring wet ground hardens it, excludes the sun and air, and promotes vegetation of weeds.

* A large weighty harrow to reduce a Rubborn soil.

ART. XIX. *Directions for managing the Orchard, Fruit, and Kitchen-Garden, in June.*

Carefully examine your trained fruit trees, both on walls and espaliers; and rub off all the fore right buds which are now produced; tying in all such branches as are loosened, or irregularly placed, whereby the sun and air may be more easily admitted to ripen them, and give them a good flavour. If this is done, it will prevent the necessity of giving them what is called a *summer pruning*, which is very injurious to the fruit branches. Besides, the sudden dressing of trees in the usual mode exposes the fruit too hastily to the sun and air.

You must now look over your vines, pulling off all the trailing shoots, and wild wood, which are produced from the sides of the eyes; for if these are suffered to remain, they will not only weaken the fruit branches, but obstruct the sun and air too much from the fruit.

Hoe and cleanse your nurseries from weeds, which exhaust the strength of the ground, and weaken the trees. Place glass phials filled with sweet water, the latter end of this month, to destroy the flies and early wasps. Pick up snails morning and evening; especially after a shower of rain: for they are great enemies to the wall-fruit in the latter part of summer. Thin your peaches, apricots, and nectarines, leaving them four or six inches asunder, according to the size of the fruit: suffer not any strong rooted plants to grow too near them, which rob them of their nourishment, and greatly weaken their fruit branches.

In dry weather water such plants as are transplanted late in the spring, observing to keep the surface of the ground covered with mulch, or turf, to prevent the roots from drying.

In

In the fore part of the month, transplant cabbages and favoys for winter use; shade them, and they will root the sooner. Hoe and clean carrots, parsnips, onions, leeks, beets, and all other late crops; for weeds left at this season will soon feed, and become very troublesome.

Set out young plants of thyme, hyssop, marjorum, savory, clary, burnet, marigolds, sorrel, &c. &c. allowing them room to spread; and they will be much stronger than those which remain in the seed beds.

Clear and hoe the ground whereon your early cauliflowers grew; and if you plant ridges of cucumbers, or melons, between, dig up the ground round them, that it may be loose for the roots of the plants to strike into. Plant kidney-beans for a late crop,—sow brown Dutch and common cabbage-lettuces to come late, observing to place them in a shady place.

Transplant lettuces sown in May for cabbaging; plant them also in the shade, but not under trees, nor near a wall, or pale, which will cause them to run up without cabbaging.

Transplant celery into trenches for blanching—and endive in an open spot: continue sowing salad herbs every week in shady borders. Sow turnips on a moist spot, when there is reason to expect rain.—Sow also brocoli for a second crop. Weed and thin the plants in your holes of cucumbers for pickling; leave only four of the strongest in a hole; earth them up, and give them water frequently.

Gather herbs for drying, of such sorts as are now in flower; hanging them up in a shady place that they may dry leisurely. In dry weather gather seeds of all sorts that are ripe, laying them to dry on mats before they are beaten out of their husks, and keep them in a dry place afterwards.

ART. XX. *On the Culture and use of Purple Trefoil, commonly called Clover.*

Mr. SYLVAN,

TREFOIL is now generally cultivated in many parts of this kingdom, that it needs not a particular description. The following observations with respect to its culture, use, and the great advantages derived to the Farmer, from propagating it, will however, I hope, be admitted with propriety in your useful work.

In the choice of the seed, that which is of a bright yellow purplish colour, is to be preferred; that which is black being good for little.

Ten

Ten or twelve pounds of this seed will be requisite for an acre of ground; for if the plants do not come up pretty thick, it will not be worth standing. The land where it is sown, should be well ploughed, and harrowed fine, otherwise the seeds will be buried too deep and lost. It may be sown with oats, barley, &c. in the spring, or after the corn is up, and then the rains will soon bring it up. If sown too early in the spring, the seeds are often burst with wet and cold; if too late, they are in danger of miscarrying from drought. The best method of harrowing this seed in, is with bushes; for the common harrow will bury them too deep.

About the middle of May this grass will be fit to cut, when great care should be taken in making it; for it requires much more labour and time to dry than common grass, and shrinks into less compass; but if it be not too rank, it is extraordinary rich food for cattle. The time for cutting, is when in full flower, for if it stands much longer, the bottoms of the stems will begin to dry, and the quality of the hay will be injured.

One acre of trefoil will feed more cattle than one of common grass; but great care should be taken on first turning them in lest they burst themselves. To prevent this, it is best at first, to turn them only an hour or two in a day, when there is no moisture in the grass. But they should never be turned into it in wet weather; and let them have hay, which will prevent the ill consequence of this food: let it be observed, that the hay must be given them, before they are turned into the field, otherwise they will not eat it. Some sow rye-grass amongst their trefoil, which they let grow together to prevent the ill consequences of the cattle feeding wholly on the trefoil: but this is, of late, disapproved by the best Norfolk Farmers, because it injures the trefoil in its growth, and souls the ground.

Where it is intended for seed, the first crop should stand till the seeds are ripe, which may be known by the stalks and heads changing brown;—then cut it in a dry time. When well dried, it may be housed till winter, and then threshed.—Many complaints have been made of the labour and difficulty in getting out the seed; but this is chiefly owing to the Farmers cutting the spring crop for hay; and leaving the second crop for seed; which ripens so late in autumn that there is not heat enough to dry the husks sufficiently.

When cattle are fed with this hay, it should always be put in racks, otherwise, they will tread and spoil it under their feet. This food is much better for other cattle than for milch cows; but when dry, is least injurious.

C. THOMPSON.

ARTICLE XXI.

To the EDITOR of the FARMER'S MAGAZINE.

SIR,

AS the following Sermon of Dr. Dodd's, a good old puritan in the reign of Charles the 2d. was in no small request among our forefathers, I make no doubt but many of your readers will be pleased with the insertion of it in your Magazine.

The Doctor having preached for several weeks against drunkenness, some of the Cambridge scholars in his neighbourhood, one evening met him near his own house, as they were reeling home from the tavern, and swore they would have one more sermon on the subject from him, his text should be the word MALT, and he should preach directly in a hollow tree that grew on the spot. The Doctor saw it was in vain to resist, he therefore began as follows:

S E R M O N.

My brethren, let me crave your reverend attention; I am a little man, come at a short warning, to preach you a short sermon, to a thin congregation, in an unworthy pulpit. Brethren, my text is *MALT*. Now I cannot divide it into sentences, because there is none; nor into words, it being but one; nor into syllables, it being but one also: Therefore I must, and necessity will oblige, or rather force me to divide it into letters, which I find in my text to be four, *M, A, L, T*. My beloved, *M* is moral, *A* allegorical, *L* is literal, and *T* is theological: Moral, my brethren, is well set forth, to shew and teach you drunkards good manners: wherefore *M* my masters, *A* all of you, *L* listen, *T* to my text.

*M*uch malt makes merry;

*A*ll ale, abusive anger;

*L*ive long, less liquor;

*T*ake thought, try temperance.

A the allegorical is, when one thing is spoken of, and another meant; the thing spoken of is *Malt*, the thing meant is the oil of Malt, or rather the spirit or strength of the Malt, properly called strong beer, which to you Gentlemen is *M* meat, *A* apparel, *L* liberty, and *T* treasure. Now the literal is according to the letter *M* much, *A* ale, *L* little, *T* thrift. Now the theological is according to the effects that it worketh, which I find in my text to be of two kinds; first, in this world; secondly in the world to come. Now the effects that I find it worketh in this world, are in some, *M* murder; in others,

A adultery; in all, *L* looseness of life; and in many, *T* treason. Now the effects that I find it worketh in the world to come, are, *M* misery, *A* anguish, *L* lamentation, and *T* torment. Now my first use shall be a use of exhortation; *M* my masters, *A* all of you, *L* leave off, *T* tipling, or else—*M* my masters, *A* all of you, *L* look for, *T* torment.

Now so much shall suffice for this explication; next, only by way of caution, take this for an inviolable truth, that a drunkard is the annoyance of modesty, the disturber of civility, a spoil of wealth, the destruction of reason, the brewer's agent, the alehouses benefactor, the beggar's companion, the constable's perplexity, his wife's woe, his children's sorrow, his neighbour's scoff, his own shame, and a wilful madman. By which he becomes a true and lively representation of a walking swill-tub, or a tavern Bacchus, in a monster of a man by the picture of a beast.—So now, Gentlemen, to conclude; I shall leave you under the protection of the Almighty, to follow your own discretions.—Farewel.

ARTICLE XXII.

Mr. SYLVAN.

THE following is an excellent remedy for an asthma, with which I have occasionally raised many of my parishioners, from a laborious state of pain and anxiety, to perfect ease and health, and by extending its usefulness you will do much good to others, and greatly oblige

May, 17, 1777.

A COUNTRY CLERGYMAN.

RECIPE.—Take of gum ammoniac, Venice soap, Turkey rhubarb, Russia castor, fresh green squills, of each two scruples, beat all into a mass, of which make pills of a middling size, and take five of them every night at bed-time.

If the squills are not moist enough to make up, a little oxymel of squills may be added.

ART. XXIII. *Observations on the Oak, and Planting.*

[Extracted from the new edition of *Evelyn's Sylva*, by Dr. Hunter.]

THE Oak, in the Linnæan system, is ranked in the class and order Monœcia Polyandria, which comprehends such plants as have male and female flowers on the same plant, the male flowers having numerous stamina.

We expect to find flowers on the common oak tree in the spring, though there is no exact time for the opening of the flowers or leaves, which depends much on the backwardness or forwardness of the season, or the difference of the situation, or soil on which the trees stand. I have observed one oak in
full

full leaf, and at the same time another, standing near it, without any such appearance, owing to the coldness or poverty of the stratum on which it stood, and which would have been unperceived, had not the tree shewn it. But notwithstanding this, observation and experience teach us, that these differences are very inconsiderable, and that the oak which is most backward in putting forth its leaves, generally retains its verdure the longest in the autumn. In general, the flowers, which are of a yellowish hue, begin to open about the 7th of April; about the 18th the leaves appear, at which time the flowers are in full bloom; and about the 6th of May the leaves will be quite out, and remain until the autumnal frosts come on.

Oaks are generally raised in vast quantities together, called woods, where they thrive best, and arrive to a greater height than in hedge-rows, &c. We seldom see a good oak in a hedge-row: They generally throw out large lateral branches, and form a spreading and beautiful head, but the trunk is for the most part is very short; whereas in woods they draw one another up, and thus sociably aspire to such a height, as to be sufficient to answer any purposes in use. — Various are the opinions of mankind about the raising a wood of this tree. Some think they should never be removed, but remain where the acorn was first planted; others, again, believe that a wood should be raised by small plants of oak taken from a nursery. — As each of these methods has its advantages, I shall therefore lay down rules, and shew the best mode of proceeding in raising an oak wood both ways, that every one may choose that which he likes the best.

And, first, to raise a wood from acorns, sown in the seminary.

Let a proper spot in the seminary be prepared against the time the seeds are ripe. The soil should be loamy, fresh, and in good heart; and should be prepared by digging it well, breaking all clods, and clearing it of weeds, roots, large stones, &c. The acorns should be gathered from the straightest, most thriving, and beautiful trees; and if they remain until they fall off themselves, they will succeed the better.

Having a sufficient quantity of well-ripened acorns for your purpose, proceed to prepare your beds in the ground that is just got ready for their reception. Mark out the beds with a line, four feet broad, and let there be an alley between each bed two feet wide; rake the earth out of the bed into the spaces designed for the alley, until the bed be sunk about two inches deep; sow your acorns in the bed, about three inches asunder, and gently press them down with a spade. Skim the earth that had been raked into the alleys

over the acorns, until it be raised about two inches above them; then, after having dressed up the bed and alley, and gently pressed it down with the back of a spade, proceed to the next bed, and so on till the whole be finished. After this set traps at proper distances, all over the beds; for if the mice find the seeds out, they will soon destroy the greatest part: The crows also, should they discover them, will be extremely troublesome. As soon as these latter are perceived to frequent the beds, some of them must be shot, and hung upon gibbets *in terrorem*, with their wings expanded, and their bills pegged open, into which some gunpowder should be put. This work is best performed in February, though some prefer the autumnal months.

In about six weeks the plants will appear above ground; and in these beds may they remain for two years, without any further trouble or care, than keeping them clean from weeds, and now and then refreshing them with water in very dry weather.

When the young trees are two years old, they will be of a proper size for planting out. Let us now see in what manner the ground designed for the wood is to be prepared to receive them. The best and only true way is by trenching, or double digging, as deep as the soil will admit of: but as this is a very expensive proceeding, and consequently would be practised by few, I shall point out another good method of preparing the ground for the reception of oak plants for the raising a wood. This is to be done by proper ploughing; and, if you choose it, the year before it is planted it may bear a crop of oats, barley, or turnips. By this means the sward will be effectually rotted, and the soil become more pliable for other preparations. After the crop is off, let the ground be ploughed very deep, and then harrowed with heavy harrows to break the clods: about the end of October, let it be ploughed again cross-ways, and harrowed as before. This is the season for planting of the sets; for the ground, by being thus cross-ploughed deep and harrowed, will be in proper order for their reception. The manner of planting the sets is as follows:

First, carefully take the plants out of the seed-bed, shorten the tap-root, and take off part of the side-shoots, that there may be an equal proportion of strength between the stem and the root. If the wood is designed to be but small, ten, twenty, or thirty acres, then lines may be drawn, and the trees planted in rows, four feet distant from row to row, and the trees two feet asunder in the row: each line must have a man and a boy

boy for planting. The ground being made light and pliable with cross-ploughing and harrowing, the man strikes his spade into the earth close to the line; he then takes it out and gives another stroke at right angles with it; then the boy, having a parcel of plants under his left arm, takes one with his right hand, and readily puts it into the crevice made by the spade at the second stroke: after this the man gently presses the mould to it with his foot, and thus the young oakling is planted. He proceeds in the same manner to the next, and so on till all is finished. An active man will, with his boy, plant 1500 or 2000 in a day; and while they are planting, others should be employed in taking up fresh sets from the seed-bed, sorting them, and preparing their roots. In short, a sufficient number of hands should be set to every part of this work, that the whole may be carried on with dispatch; for the ground cannot be too soon furnished with its plants, after it is in readiness to receive them; neither can the plants be put too early into the ground, after they are taken up from the seminary.—Those plants which are nearly of the same size, should be made to occupy a large quarter together, and the weakest may be rejected, if there are enough for the purpose; or they may be left in the seminary a year longer, to gain strength.

The trees, either for small or large plantations, being in the ground, the first care should be to fence them well from cattle, and even, if possible, from rabbits and hares. The next should be, to keep them clear from weeds, that they may not be incommoded in their vegetating progress. Some land is more prolific of weeds than others; but in all they must be carefully watched, and destroyed at their first appearance. In small plantations hoeing may do; but where the plantations are large and noble, a double-shelving plow must be provided; and when the weeds are got two or three inches high, this must be drawn exactly down the middle of each row by horses with their mouths muzzled, somebody leading the foremost horse: this plow will effectually throw a ridge each way, so that the edge of it will be almost contiguous to the plants on either side. This being done, the whole surface of the ground will be changed, and the weeds all buried, except a few about the stems of the plants, which a man following the plow should be ready to cut or pluck up. In this manner the ground may lie until a fresh crop of weeds present themselves; when these are about three inches high, a common plow should be provided, to go up one side of the row and down the other, to plow the ridges made by the double-shelving plow, into
their

their former places, men following with hoes to destroy such weeds as are near the stems of the trees. Thus will the whole scene be changed again; the ground will appear as new tilled; and in this condition it may remain until the weeds call for the double-shelving plow a second time, which must also be followed alternately with the common plow, as occasion may require. By this means the ground will not only be kept clean of weeds, but the earth, by constant stirring, will be more replete with vegetating juices, the gentle showers will produce their good effects, the sun will have his influence, and all the powers of vegetation will combine to nourish and set forward the infant oak. This work must be repeated every year, until the oaks are of a height sufficient to destroy the weeds, which may be, perhaps, in three or four years, according to the goodness of the ground in which they are planted.—Thus you have a wood planted with young oaks taken from the nursery or seed-bed. [To be continued.]

[The Editor returns his most unfeigned thanks to Capt. Hinde, of Preston; he thinks the plough in the next Magazine is so like that Capt. Hinde has sent, that the engraving of both would be superfluous; as Mr. Sharp of Leadenhall-street has been kind enough to favour us with a view of his excellent yard, to make engravings from the instruments of husbandry. The engraving for the plough or horse-hoe, was finished before we received Capt. Hinde's favour, which has every merit to recommend it.]

Average PRICES of CORN from May 5 to May 10, 1777.

Wheat Rye Barley Oats Beans					COUNTIES upon the COAST.				
s. d.	s. d.	s. d.	s. d.	s. d.	Essex	5	4	2	5 2 0 3 1
London	5	6	2	11	Suffolk	4	1	2	10 2 2 1 11 2 11
					Norfolk	5	5	2	9 1 11 1 11
					Lincoln	5	10	3	5 2 3 1 11 3 6
					York	5	8	3	6 2 5 1 11 3 9
					Durham	5	7	3	10 1 8 3 8
					Northumb.	5	6	3	5 2 1 1 7 3 1
					Cumberland	5	5	3	6 1 11 1 8 3 4
					Westmorel.	6	3		2 2 1 7 3 4
					Lancashire	5	11		2 3 1 10 3 4
					Cheshire	6	2		2 11 2 3
					Monmouth	6	c		3 1 2 2
					Somerset	6	c	3	0 2 3 1 11 3 3
					Devon	6	1		2 5 1 7
					Cornwall	5	9		2 6 1 7
					Dorset	5	10		2 5 1 11 3 10
					Hampshire	5	5		2 2 1 11 3 6
					Suffex	4	11		2 3 2 6 3 4
					Kent	5	5		2 7 2 3 3 2
					From April 28, to May 3, 1777.				
					WALES.				
					No. Wales	5	7	3	11 2 4 17 3 6
					So. Wales	5	6	4	5 2 11 17 2 10
					Part of SCOTLAND				
					Wheat Rye Barley Oats Beans Big	4	2	—	2 6 1 6 2 3 1 7

COUNTIES INLAND.

Middlesex	5	8	2	5 2 2 3 5
Surry	5	7	2	6 2 4 3 9
Hertford	5	8	2	7 2 2 3 9
Bedford	5	6 3	6 2	8 2 2 3 4
Cambridge	5	6 3	1 2	7 2 0 2 6
Huntingdon	5	6	2	7 1 11 3 0
Northampt.	5	11 2	10 2	7 2 1 3 6
Rutland	5	8	2	9 2 2 3 11
Leicester	5	11 3	4 2	7 2 2 3 11
Nottingham	5	5 3	5 2	6 2 6 4 7
Derby	6	5	2	9 2 6 4 6
Stafford	6	4 4	5 2	2 2 5 4 6
Salop	5	10 4	5 3	2 2 4 4 7
Hereford	4	10	3	0 2 6 4 9
Worcester	5	11	2	11 2 10 3 8
Warwick	6	c	2	11 2 7 4 0
Gloucester	5	8	2	6 2 1 3 6
Wilts	5	7	2	6 2 1 3 11
Berks	5	6	2	4 2 2 3 3
Oxford	5	6	2	3 2 2 3 4
Bucks	5	8	2	6 2 3 3 5

POETICAL ESSAYS.

M A Y.—An ODE.

LOVELY May, with rose buds crown'd,
Sweetest month of all the year;
Strew thy flowrets o'er the ground,
Weave fresh chaplets for the fair.
Flora now the fields adorns;
Music fills the blooming grove;
Beauty o'er the painted lawns,
Flutters on the wings of love.
'Neath the hawthorns fragrant shade
Hark! the shepherd tunes his lay;
While the thrushes in the glade,
Carrol forth the praise of MAY.
Softly sighs the balmy breeze,
Through the violet-scented vale;
Gently wave the new-cloath'd trees;
Purling springs refresh the dale.
Now, while beauty charms the eye;
Now, while music soothes the ear,
Health, descending from the sky,
And peace, with olives crown'd,
appear.
Let us then, when earliest dawn
Opes the purple gates of day,
Taste the freshness of the lawn,
And hail the opening sweets of MAY.
Bath, EUSEBIUS.

An Old BALLAD.

Written about the time of Q. Elizabeth.

HENCE false hopes, and quivering fears,
Anxious sighs, and torturing cares;
Fly from us to stately courts,
Fly where mimic fortune sports,
Where no joy in mirth we see,
And sorrows only real be.
From our country pleasures fly,
Troops of human misery;
But come, placid serene looks,
Clear as be the chrystal brooks;
Come, fair peace, and serene mind,
In these true pleasures we can find,
Here's no antick mask or dance,
But of kids that frisk and prance;
Here no wars are ever seen,
But 'tween two lambs upon the green;
Here no wounds are ever found,
Save what the plowshare gives the ground:

Here are no entrapping baits,
To hasten on too hasty fates,
Save of fish, who like men look
On the bait, but not the hook:
Here's no envy, save among
The birds, for prize of their sweet song:
O blest'd groves! O! may ye be
Ever mirth's best nursery.
May fair peace, and pure content,
Here for ever pitch their tent;
And through every circling year,
May we for ever find them here.

Tendit volatile plumbum;

SOON as the eastern rising sun
Had spread the blushing day,
Sprung from her nest, the lark begun
To thrill his morning lay.

Of all sky-piercing birds, none sing
With half his wonted glee,
Of all who airy climates wing,
None half so true as he.

Pois'd in the air, to ev'ry note
The hills and vales reply;

While emulation swell'd his throat,
Ne'er thinking danger nigh.

For who can tell when fate will frown,
Or smooth his wrinkled brow?—

Scarce he his eyes had turned down,
The gunner was below.

Yet tho' he knew the death fraught
arm,

On which ne'er pity wrought;
Tho' thro' his body ran th' alarm,
He mercy thus besought.

"Ah, stay;—Ah!—stay the cruel fire,

"Which soon must me undo;

"Left, while you kill a loving Sire,

"You starve the offspring too.

"Not for myself alone I fear,

"More in my danger share;—

"Oh! let me stay a little here,

"To prove a father's care.

"Restrain thine arm. If blood delights,

"Go cross yon azure deep;

"There glory's guerdon thee invites,

"Where wives deserted weep.

"Hear and revenge the widow's woe

"Where mad fanatics stalk;

"Where rebel-rivers purpled flow,

"And plains with carnage smoke.

"There

"There mayst thou gain illustrious bays,
 "By grateful crouds conferr'd;
 "But small the pittance of thy praise,
 "To kill—an harmless bird."
 Vex'd with the keen reproach, too well
 The luckless bird he ey'd;
 Pierc'd with the winged lead it fell,
 Just flutter'd,—chirp'd,—and dy'd.

—♦♦♦♦♦—
 An Elegy on a Tallow Candle.

PENSIVE I lay, e'en from the dead
 of night,
 Until the sun his daily course began,
 Reflecting on the candle's wasting light,
 And moralizing on the fate of man.
 White and unfully'd was that cotton
 wick, [came;
 When from the chandler first to me it
 Behold how black! the greasy drops
 how thick! [flame.
 Such colour takes it from imparted
 Such is the youth of manners strict
 and pure, [guide;
 Till wantonly he quits his reason's
 By flatt'ry drawn, he stoops to vice's
 lure, [wide.
 And from the paths of reason wanders
 His passions melt, his manly vigour
 faints, [gone,
 Nor mourns he aught his former vigour
 For foul society his morals taint,
 And vice triumphant marks him for
 her own.

The fool who sells his freedom for a
 smile,
 Or for a ribband barter peace of mind,
 Like wasting wicks just glimmers for
 awhile, [behind.
 Expires in smoke, and leaves a stink
 The many perils that ambition wait,
 When soaring high, we still the lower
 fall,
 Are but the snuffers of expiring light,
 And death's the grand extinguisher of
 all.

—♦♦♦♦♦—
 Inscription in a Hermitage at Ansley-
 Hall, in Warwickshire.

By Mr. WARTON.

BENEATH this stony roof reclin'd,
 I sooth to peace my pensive mind:
 And while, to shade my lowly cave,
 Embow'ring elms their umbrage wave;
 And while the maple dish is mine,
 The beechen cup, unstain'd with wine;
 I scorn the gay licentious crowd,
 Nor heed the toys that deck the proud.

Within my limits, lone and still,
 The blackbird pipes in artless trill;
 Fast by my couch, congenial guest!
 The wren has wove her mossy nest;
 From busy scenes, and brighter skies,
 To lurk with innocence, she flies;
 Here hopes in safe repose to dwell,
 Nor aught suspects the sylvan cell.

At morn, I take my custom'd round,
 To mark how buds yon shrubby mound;
 And every opening primrose count,
 That trimly paints my blooming mount;
 Or o'er the sculptures, quaint and rude,
 That grace my gloomy solitude,
 I teach in winding wreathes to stray
 Fantastic ivy's gadding spray.

At eve, within yon studious nook,
 I ope my brass-embossed book,
 Pourtray'd with many a holy deed
 Of martyrs, crown'd with heav'nly
 meed:

Then as my taper waxes dim,
 Chant, ere I sleep, my measur'd hymn;
 And, at the close, the gleams behold
 Of parting wings bedropt with gold.

With such pure joys my bliss create,
 Who but would smile at guilty state?
 Who but would wish his holy lot
 In calm oblivion's humble grot?
 Who but would cast his pomp away,
 To take my staff, and amice grey,
 And to the world's tumultuous stage,
 Prefer the blameless HERMITAGE?

—♦♦♦♦♦—
 The ANT.

TURN on the prudent ant, thy heed-
 ful eyes, [wise.
 Observe her labours, sluggard, and be
 No stern command, no monitory voice
 Prescribes her duty or directs her choice,
 Yet timely provident, she hastes away
 To snatch the blessing of the plenteous
 day; [sing plain,
 When fruitful summer loads the teem-
 She gleans the harvest, and she stores
 the grain.

How long shall sloth usurp thy use-
 less hours, [powers,
 Dissolve thy vigour, and unchain thy
 While artful shades thy downy couch
 enclose,
 And soft sollicitation courts repose,
 Amidst the drowsy charms of dull de-
 light, [flight,
 Year chafes year, with unremitting
 Till want, now following fraudulent
 and slow, [bush'd foe,
 Shall spring to seize thee like an am-



T H E
FARMER'S MAGAZINE.



*A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]*

American Husbandry.

NEW-YORK. **I**T is difficult, and indeed immaterial, to settle the claims of prior possession amongst the colonists of America. Captain Hudson, an Englishman, is said to have been the first who discovered New-York, and about the Year 1608, he sold it to the Dutch. This transaction was certainly very questionable, as it had not the sanction of James the first, without which it was thought it was not in the power of a private subject to dispose of so important and so fine a tract of country: The Dutch, however, proceeded to settle it, and to place a governor over it, in opposition to the complaints of the crown of England, and to the protest of K. James against such possession and settlement. Sir Samuel Argal, in his way from Virginia to New-Scotland, attacked and destroyed their plantations, by order, it is to be presumed, of the court of England, while he was governor of Virginia. Upon this, the Dutch applied to King James for a confirmation of Hudson's conveyance, but all they could obtain was, leave to build some cottages for the conveniency of their ships touching for water in their way to the Brazils; this permission afforded them pretexts for enlarging their settlements, till at last, New-Netherlands, as the province was then called, became a flourishing colony, and carried on a very considerable trade with the neighbouring Indians, and even with those of Canada. In process of time they built the town of Amsterdam, in Manahatan island, at the mouth

X

of

of Hudson's, as they called the great river Nassau bay, lying towards the coast; about one hundred and fifty miles up the river, they built Orange-fort, which was their great staple for their commerce with the Indians.

When the Dutch war became inevitable in the year 1664, King Charles II. made a present of large tracts of land in those countries to his brother the Duke of York, in which New-York was included, and the Duke let it out in other sub-divisions to other proprietors to render those gifts effectual. Sir Robert Carr, an English commander of great courage and spirit, before the declaration of the first war, was sent with a strong squadron, and three thousand land troops, the greatest ornament that had been ever sent from Europe to America, with orders to dispossess the Dutch of this fine country, and put the Duke of York in possession of it: The Dutch governor, though a brave man, being unprovided to receive them, was obliged to capitulate, and to deliver up the place; the capitulation was wise and honourable, for all the Dutch subjects who were willing to submit to the English government, were at liberty to reside in the place, and protected in their persons and effects. The Dutch, however, restored it in a few months after by treaty of peace.

The colony of New-York is situated between 40 and 41 degrees of north latitude, and between 72 and 76 degrees of west longitude; it is about three hundred miles in length, and one hundred and fifty in breadth, bounded on the north by New-England, on the south by Pennsylvania and New-Jersey, on the east by New-England and the Atlantic ocean, and on the west by Canada. This province, including the island of New-York, Long-Island, and Staten-Island, is divided into the ten following counties: New-York, Albany, Ulster, Dutchess, Orange, West-Chester, King's, Queen's, Suffolk, Richmond.

The air of this province is very salutary, and the climate more temperate than that of New England; but colder in winter and hotter in summer than in European countries of the same latitude; the soil is remarkably fertile in most parts of the province, and many districts well cultivated.

The soil of the province is in general very good; on the coast it is sandy, but backwards they have large tracts of rich black mould, loam, and marle, pliable clays, with mixtures in great varieties: at some distance from the sea, the country swells into fine ridges and hills, which are covered with fruit trees, and the soil on many of them is rich and deep; the productions

productions of New-York, besides those common to New-England, are several sorts of fruits which will not thrive there; and wheat, which is so very thin in the New-England provinces, flourishes here equal to any part of America, or perhaps Europe; they raise enough for their own consumption, and considerable exportation. They in general sow their wheat at autumn, finding it answer better than spring, and in many parts it yields a greater increase than in England; they sow about two bushels to an acre, and in general reap from twenty to thirty or even forty, and this with husbandry inferior to that of the English farmer.

Other productions are maize, rye, barley, oats, pease, beans, buck-wheat, potatoes, &c.—Nor must the culture of turnips and clover be left out of the catalogue, which are now become common, to the great advantage of the farmer.

They sow maize in great abundance: a loose soil is reckoned best for that purpose, clay not doing well at all; and they reckon it a very good kind of corn, because the shoot recovers after being cut down by the frost, and will also bear a drought better than most other corn.

They raise also great quantities of flax, and hemp enough for their own consumption.

Oysters so abound in the seas of New-York, that they burn the shells for lime, with which they make mortar, and manure the land.

NEW-JERSEY. This province comes naturally to be treated of after New-York, as both were formerly under the same governor, and it formed part of New-Holland when conquered from the Dutch. The Senecas and the Maquas were amongst the native Indians, who originally inhabited this territory, which is said to have been discovered by Capt. Hudson. It is certain, however, that it was not inhabited by the English long after the discovery; and the first Europeans we find settled here, were the Swedes, who were chiefly seated on the south side of the river Raritan, now called Delaware river, towards the frontiers of Pennsylvania. Here they had three towns, Christina, Gottembourg, and Elfirabourg, which last retains its name to this day. Notwithstanding this it was afterwards found, or pretended, (when Charles II. perceived it convenient for this purpose) that Sebastian Cabot had formerly taken possession of all this coast in the name of Henry VII. of England. Be this as it may, it is certain that the Swedes in general having no great turn for commercial affairs

fairs or territorial improvements, suffered their settlement here to languish, so that the Dutch almost entirely planted the north parts of New-Jersey by the name of Nova Belgia, and about the year 1665, Rizing, the Swedish General, sold to them all the Swedish possessions. After this New-Jersey, with the three lower counties of Pennsylvania upon Delaware river, became part of the New Netherlands or Nova Belgia.

When the reduction of this province was resolved upon by Charles II. he made a previous grant of both the property and government of it to his brother the Duke of York, by a deed, dated March 12, 1663-4, and that Duke assigned the government of that port, which is called New-Jersey, to the Lord Berkly and Sir George Carteret. These proprietors did not long enjoy their purchase, but sold it to others, who in the year 1702 surrendered their charter to Queen Anne, who accepted it, and New-Jersey has ever since been a royal government.

It is situated between 39 and 43 degrees, of north latitude, is about 160 miles in length, and sixty in breadth; bounded on the north by New-York; on the south by Delaware bay; on the east by the Atlantic ocean; and on the west by Pennsylvania. It is divided into East and West: East Jersey contains the counties of Middlesex, Monmouth, Essex, Somerset, and Bergen; West Jersey contains the counties of Burlington, Gloucester, Salem, Cumberland, Cape May, Huntingdon, Morris and Suffex.

The air is healthy, and the climate nearly the same as New-York. But the summers are something longer, and the cold in winter less severe. The soil is various; one part in four at least of the province is barren sandy land, the other good, and some of it remarkably fertile. The animals in Jersey are the same with those in New-England: and the vegetable productions not very different. The sandy parts of the country produce excellent pines and cedars, and the arable lands, large crops of excellent wheat, barley, rye, Indian corn, &c. together with a vast variety of delicious fruits. There is in the county of Berjen a very valuable copper-mine, which is worked to great advantage; excellent iron ore is also found in several parts of the province. This province is said to produce more wheat than any of the other colonies.

The farms are most of them single, and you seldom meet with two together except in towns; each farm has its corn-fields, woods, pastures, and meadows. Among the native plants we may reckon the hopnifs or hpnifs, as it is called by the Indians, a wild plant growing in meadows with roots resembling

bling potatoes, which are boiled and eaten by the Indians instead of bread.

Another esculent root is the katniss, which grows in muddy or very wet ground; this root is oblong, commonly an inch and a half long, and an inch and a quarter broad in the middle, but sometimes as big as a man's fist: this the Indians either boil, or roast in ashes, and it is not unlike potatoes.

The tawho is another Indian plant, which grows in moist or wet places to the size of a man's thigh; these also are never eaten raw, but roasted.

[*To be continued.*]

ART. II. *Observations on the Use of Dry Food for Cattle.*

[Extracted and abridged from Lord Kaimes's Gentleman Farmer.]

AS Hay is generally used as food for cattle of every kind, it is a capital object in husbandry; and may certainly be carried to greater perfection than is commonly done. We shall therefore examine the different grasses of which hay is made. Red clover is a succulent plant of the leguminous tribe, rising to three feet in height, and flowering early in June. Rye-grass is a culmiferous plant, dry and solid, like other plants of that tribe, rising commonly in a good soil to four feet. It shoots early in May, and its seed ripens quicker than that of any other plant.

Yellow clover, and ribwort, both leguminous plants, are more tender and succulent than rye-grass; but less so than red clover: they rise to between three and four feet in height. Rye-grass, on account of its solidity, is of all, the best food for horses; and next to that yellow clover and ribwort. Horned cattle delight in leguminous plants, red clover especially: Tender grasses are best for animals that chew the cud. Red and white clover bloom, and perfect their seed together: the white makes excellent dry feed for sheep; but as it seldom rises above eighteen inches, it is less proper for hay, than any other. With respect to time, red clover cannot be depended on for hay longer than two years; the third year it is worth little. Rye-grass, ribwort, and yellow clover, stand good three years—from that time they decline; and after the seventh year afford little pasture.

The general practice has been to mix for hay, rye-grass, and red clover, with a small quantity of white clover: But two weighty objections occur against this method: The first is,

is, that in the beginning of July, when the red clover is fit to be cut for hay, the rye-grass seed is ripe, after which it grows no more than barley or wheat cut when ripe; whereas, if rye-grass be cut before the seed is formed, it grows all summer, and even in winter, till it makes way for new shoots in the spring. The other objection is of still greater weight: After a crop or two of hay the field is surrendered to pasture: The red clover wears out the second year, leaving nothing but the rye-grass, which continues only one year more in perfection; and the small proportion of white clover has not yet got time to spread over the field. Thus after the second year the pasture becomes indifferent; and grows worse and worse, unless the field happens to stock itself with natural grasses.—Nor is this all:—While the field is thinly stocked with sown grasses, weeds rise in great plenty in the vacuities, and hasten the declension of the rye-grass and white clover; and if the red clover happens to be a scanty crop the second year, it encourages weeds no less than a scanty crop of pease.

These things considered we will venture to suggest a better plan. The best hay for horses, is, a mixture of rye-grass and yellow clover, which flower together, and are fit to be cut for hay the beginning of June, when still in flower, and the seed not formed.

At that time, being full of sap, they are in perfection for hay: and when cut thus early they grow again vigorously, and afford a second crop in September; or excellent pasture, if the season be unfavourable for hay. When the first cuttings are later than the beginning of June, the stems turn hard and woody, and will not be eaten by horses unless they are very hungry. But this method is principally recommended to gentlemen and farmers for feeding their own horses. Those who sell hay will find greater profit in cutting when the seed is ripe, because the seed is a profitable article. The hay, it is true, separate from the seed, is little better than straw; but that is no objection to the innkeepers, whose profit is the greater, the less hay travelling horses consume.

My reason for chusing these two plants for hay to horses, is, that, of all leguminous plants, yellow clover approaches the nearest in solidity to rye-grass, and that they dry well together.

Hay for horned cattle ought to be made of red clover, yellow clover, and ribwort: ten pounds of red clover, ten of ribwort, and four of yellow clover, are sufficient for an acre.

When too much hay, or corn, is given to a horse at once, he eats greedily, and is apt to surfeit on it. It is therefore better to give it in small quantities, at intervals, and then every

every particle is eaten up clean; and time is allowed for proper digestion, which is essentially necessary to preserve hard working horses in health, strength, and spirits.

ART. III. *Observations on Reaping Corn, and storing it up for Winter. By a North Country Farmer.*

IT is the opinion of many farmers, that wheat ought to be cut before it is fully ripe—their reasons are, that ripe wheat is apt to shake, and that the flour is then not so good. With respect to the last, it is contrary to nature, that any seed can be better in an unripe state than when brought to perfection. With respect to the first, wheat at the point of perfection is not more liable to shake than for some days before: The husk does not open till some time after the grain is fully ripe; and then it should be cut immediately.

One should imagine, that a caution against cutting corn when wet is unnecessary, but experience teaches us the contrary: The impatience of farmers occasions their doing it frequently, without considering that corn while standing will dry in half a day; but in a close sheaf, the weather must be favourable if it dries in a week. In moist weather it will never dry.

Barley is the most difficult grain of any to be dried for keeping: Having no straw the rain has an easy access to it; and it has a tendency to malting when long wet. Where the ground has been smoothed by rolling, it is best to mow it: The scythe being more expeditious than the sickle, removes it sooner from the danger of wind, and gives one third more straw; which is a capital article for dung when other manure is at a great distance.

Barley sown with grass seeds, especially red clover, requires a different management. Where the grass is cut along with it, the difficulty is great of getting it dry enough to be ventured into a stack. The best way is, to cut the barley with a sickle above the clover, so that nothing but clean barley is bound up. Then cut with a scythe the stubble and grass, which make excellent winter food. The same method is proper for oats, with this difference, that when the field is exposed to the southwest wind, it is less necessary to bind up immediately after mowing.

The best way for drying pease, is to keep separate the handfuls that are cut: In the common way of heaping pease together they easily imbibe wet, but dry not so soon.

With

With respect to beans, the top of the handful last cut ought to be laid on the bottom of the former, which gives ready access to the wind. By this method pease and beans are ready for the stack in half the ordinary time.

The size, and manner of binding wheat sheaves ought to be particularly regarded. A sheaf is commonly made as large as can be contained in two lengths of the corn tied by the ears in a band. To prevent its untying the binder presses it down with his knee, and binds it so hard as totally to exclude the air. This is very wrong; for if there be any moisture in the corn, a process of fermentation and putrefaction commences in the sheaf; and when these fermenting sheaves are piled together in the stack, both corn and straw receive irreparable injury. How stupid it is to make sheaves thus large and weighty! they require an effort to move them that frequently bursts the band, and occasions loss of grain, besides the trouble of a second tying. To prevent these inconveniences I have long practised the following method with success. My sheaves are never larger than to be contained in one length of the corn cut close to the ground; the binder's arm compresses this sheaf sufficiently without the help of his knee.

The additional time or hands that this mode of binding requires are trifling, and not to be regarded when compared with the advantage of drying soon and being easily moved. Of a small sheaf the air pervades every part: nor is it so apt to be broken as a large one, however firmly bound.

As in our climate we have frequently fickle weather in harvest, the most expeditious method should be taken for carrying the corn from the field to the stack or barn. Common waggons and large carts are very dilatory, as they must stand in the yard till unloaded sheaf by sheaf. My method is, to use long carts moveable upon the axle, so as at once to turn the whole load gently down on the ground; which is forked up by a man to the stack: By this method two carts will do the work of four or five.

Building round stacks in the yard is far preferable to housing the corn. When housed if it be not exceedingly dry, it contracts a mustiness, which is the first step to putrefaction. Another circumstance is worthy notice:—In the yard, a stack of corn set on a pedestal, is preserved from rats and mice. No method has yet been invented to preserve corn in barns from these destructive vermin. The proper manner of building a stack is to make every sheaf incline downward from the top, or ears to the bottom. Where the sheaves are laid horizontally the stack will take in rain both above and below. The
top

top should be formed with three sheaves drawn to a point. It is common to delay covering a stack for a week or two; but this is very absurd; for if much rain fall in the interim, it is not in the power of winds to dry it. Vegetation will begin in the external parts, and exclude the air from the internal. And to prevent a putrefaction the stack must be thrown down, and every sheaf exposed to the air. All this trouble would be saved, and much damage to the corn prevented, by covering the stacks immediately.

ARTICLE IV.

To the EDITOR of the FARMER'S MAGAZINE.

SIR,

AS I have found many useful hints in your Magazine, on divers branches of the farmer's business, I am disposed to send you a few general observations which I have made in the course of near thirty years; and which experience has taught me will, if attended to, prove of some advantage to others.

If wheat be struck with the blight, the straw in such case is hollow and spongy, and easily drinks in the wet; therefore if the corn be tolerably dry, and in order, and the weather fickle, it is most adviseable to get it into the barn as quick as possible; for if such loose straw should once get thoroughly wet, and showery weather should follow, it will be much longer before it gets dry enough to carry than any other corn.

A cloudy rhimy day is better to carry home oats in than a hot day; for in hot, dry, clear weather the straw will be so sleek that it will be troublesome to load, and difficult to keep from slipping off the waggon.—The oats will also be less brittle on a rhimy, than a clear, hot day.

In Leicestershire, the farmers are very fond of laying the floors of their barns and granaries with stone; but these as well as earthen floors communicate such a dampness to wheat, that it is worse either for keeping, or exporting, by at least six-pence in a bushel, than corn off a good dry plank floor.

A threshing machine that is full of nails, injures the corn in threshing, unless he ties a piece of coarse cloth or old hat on the soles.

The same thresher can with equal ease thresh six bushels of wheat in a day, which grew on a warm gravelly soil; as he can four, produced on cold clayey lands.

One week in particular, my wheat yielded very little flour in grinding, and had abundance of bran: My thresher assured me the reason was, because I had threshed that wheat when the weather was very damp; for, said he, then the wheat will be cold, and will not grind well, if the weather be ever so dry afterwards; but if threshed dry, and put into sacks, it will not afterwards grow heavier; and yet if threshed in open weather, and then put into sacks, it will often grow musty in a month's time.

I was lately asking a good farmer in my neighbourhood, whether it was best to carry rye grass, or clover hay, for seed, to the barn, or the rick, and thresh it out afterwards, or to thresh it out in the field at hay-making. The farmer said, he did it both ways, but thought it best to thresh it out on the field: For, (said he) if the sun shines out hot, it will brittle much, and there will be great loss in carrying it home, especially if you have to carry it through narrow lanes; and it will also turn damp in the mow, so that it will thresh badly; whereas if threshed in the field about noon, when dry, one man will thresh as much as three can do when it is housed.

In making a rick of corn abroad, be careful to keep the middle highest; and then, when the rick sinks, (as it always will in a few days) that will occasion the outside to lie closer: Whereas, if the middle be left hollow, the rick by settling in the middle, will make the sides hollow, and the rain will the more easily penetrate it. If you find sparrow holes under the eaves of a rick of corn that stands on the ground, it is a certain sign that there are neither rats nor mice; for the latter would, by their squeaking, and running about in the night, so disturb the birds, that they would not continue to roost there.

When my hay is not well brought in, I generally make my ricks long and narrow, to prevent heating; but round ricks are in general the best and most profitable. The best method I know of to prevent ricks from heating, is to place a faggot of wood upright in the middle; and when the hay is got up as high as the faggot, place another upon it, and so on to the top. In the middle of the stack, place two faggots horizontally; by this means the air will have free access not only from bottom to top, but also through the sides, and prevent any damage.

If

If a heavy rain falls on a hay-rick before it is thatched, let it be well dried before you thatch it, otherwise it will take great damage.

Sheep and other cattle will not eat spring vetches made into winter fodder so well as they will the winter vetches; the halm of the latter having more strength and spirit in it, than the halm of the former, which is loose and woolly. They also in general prefer white oat-straw to black. If thistles are cut young, when they are withered, cattle will lick them up, although while they are growing they will not touch them.

Horse beans thrive best in a strong moist soil, and an open exposure, for they never do well in dry warm land, or in small inclosures, where they are subject to blight, and frequently attacked by small black insects, which are often in such quantities as to cover almost the whole stems: but in open fields, where the soil is strong, this rarely happens. Beans are usually sown on land newly broken up, because they are of great use to break and pulverize the ground, and to destroy weeds; so that the land is rendered much better for corn after a crop of beans than before. Three bushels to an acre is a sufficient quantity, and fewer will frequently do. The common produce is from twenty to twenty-five bushels an acre. The beans should lie in the mow to sweat before they are threshed out, for as the halm is very large and succulent, so it is very apt to give and grow moist.

In Wiltshire they sow beans in December, and find them succeed very well. The reason is, that being check'd by the cold weather, they spend not their strength in stalk, till the root has got good fastening in the ground. By this means, when spring comes, the stalks are much better fed; whereas beans sown late run into halm, and draw faster from the root than it can afford.

If the ground is dry, and worked fine, it is best to sow peas under furrow; but if they are sowed under furrow when the ground was wet, and a dry season succeed, they will not come up kindly. By sowing under furrow they are best secured from pigeons.

If these hints merit your approbation, I may probably send you some others in future,

and am, your constant reader, and well-wisher,

JACOB SWAN,

We thank our kind correspondent for the above letter, and shall be happy in hearing from him frequently; but

as he appears to be an experienced farmer, we wish him in future to confine his letters more to single subjects, and to treat them more fully.]

ART. V. *Observations on Plough and Cart Tackle.*

Extracted and abridged from LITTLE'S Husbandry.

IN Leicestershire, and some of the neighbouring counties, they use Danish iron in all plough tackle, except the coul- ters and plough-shares, which are English iron. They think Danish iron is more durable and tough than English, which being more brittle, will not work so well, and wears faster. I asked a Loughborough blacksmith, if Danish iron was best for wheel tire; he said, yes, if the smith is careful not to work up that which is rank with steel; otherwise it would break presently.

It is much the interest of large farmers to agree with the smith for his plough irons by the great; otherwise their servants may send their shares and coul- ters before they are worn out, for the sake of putting a little money into their pockets by the sale of them. The better order the irons are kept in, the easier it is both to man and horses in ploughing: The longer the point of your share is, the more steady it goes, and carries an even furrow.

To put old iron bands on new ploughs is very bad husbandry, for the wood must necessarily wear out soon, when the iron is not broad enough to save it.

It is much the most durable way to turn up the edges of the bands to wheels, which adds to the thickness of the edgings, and is the main security to the bands; for in the edgings they wear away first, although wheelwrights, for their own advantage, will pretend there is nothing saved by it. But where the edgings are not turned up, they will, by use, soon wear away, and the fellies also; so that the spokes will be ready to start from their sockets, while the timber in other respects is very sound.

For fellies, ash that will split is with us thought the fittest, and much the strongest; but in the Isle of Wight they deem elm fellies the best for wheels, especially in deep roads, where the waggons sway about in going.

If the farmers in Hampshire and Wiltshire could be persuaded to board up their waggons, as they do in Hertfordshire, Essex, Suffolk, and Norfolk, the price of the boards would

be

be gained in one harvest by saving the droppings of the corn.

Chequer worked harness, although it looks pretty, yet it soon flies to pieces, being worked up with small thongs. The cheapest way is to work up the harness at your own house. The collar-maker has only one shilling a day and diet, if you find the stuff. In that case you must provide two or three bull's hides and put them out to be dressed. The dressing commonly costs nearly as much as the hides, be they large or small. When these hides are dressed they will take no harm for four or five years, if kept dry and from the sun. A bull's hide should never be used by the shoe-maker, nor a cow's by the collar-maker, there being a statute provided in that case, although not strictly observed. It is best for the farmer always to keep a bull's hide or two ready dressed; he may use them on all occasions about his harness, except for sewing thongs, and these must be made of white leather.

If the eyes of the plough traces are lined with leather, (which is good to keep them from fretting) such lining will cost no more than hempen traces.

The halters, cruppers, and back-bands, should be made of bull hide; the belly-bands of heifer hide, doubly lined with horse hide; the pipes of the back, and the collars of the belly, of bull hide. If the leather be not well dressed with allum and salt, it will have a raw black seam run throughout; which when it grows dry will be hard and horny, and crack in bending. If well dressed, a set of harness, with good usage, may last ten or twelve years, and wet weather will not damage them; but great care should be taken not to hang them against a plaister wall in winter, for the lime will spoil and rot them sooner than any thing.

ART. VI. *Dr. Rowley's Recipe for the Bite of a Mad Dog.*

DISSOLVE ten grains of camphire in a small wine glass full of brandy; add to it sixteen grains of native and factitious cinnabar, of mule twelve grains, and of opium one grain; shake them up well, and drink it for one dose.

Second, rub daily into the wound, and part adjacent, one drachm of strong mercurial ointment, or more, if the patient can bear it. Make this ointment thus: Take two ounces of hog's lard, and one ounce of quick-silver, rub them well together in a mortar, till they are incorporated.

If any raging symptoms appear, repeat the dose every six hours,

hours, otherwise every third day, rubbing the ointment in daily according to the strength of the patient; who should abstain from flesh, wine, spirituous liquors, spices, and hot inflammatory food: Let his aliment be light, moist, and laxative.—I have recovered one person under a hydrophobia, several under a subfultus tendinum, and others who have been bitten, and no symptoms have appeared afterwards.

Taking the dose seven times I take to be sufficient: The ointment should be continued twelve days.

ART. VII. *Directions for managing the Orchard, Fruit, and Kitchen Garden, in July.*

AT the beginning of this month sow the last crop of kidney-beans in some well sheltered situation, that they may escape the frosts in autumn. If the ground be very dry, you should soak the beans six or seven hours in water before you plant them. In the middle or latter end of the month sow spinage, coleworts, carrots, turnips, onions, &c. to stand the winter. Transplant brocoli, favoys, cauliflowers, and cabbages, for spring use; and trench your celery for winter use. Earth up your cucumber plants that are for pickling, and winter cabbages.

Destroy weeds in every part of the garden, else, being now fit for seeding, they will give you a great deal of trouble for years to come. It is also an excellent practice to weed your dunghills, for if they happen to seed there, the seeds will be carried with the dung into the garden, and produce a plentiful crop.

In dry weather water all such plants as have been newly transplanted; this should be done in an evening, as the moisture will then have time to soak to the roots before the heat of the sun exhales it.

Gather seeds as directed in last month.

Pull up garlick, rocamboles, shallots, and onions, as soon as their leaves begin to wither; and spread them thin in a dry airy place, that they may be perfectly dry before they are laid up for winter use.

Earth up your celery which was planted in drills last month, as it advances in height; and tie up the endive that is full blown to blanch—Observe always to do this in the afternoon of a dry day; for if the inner leaves of the plants are moist when tyed up, they will rot.

You

You may this month repair the losses of your young asparagus beds, which were planted in the spring, by putting fresh plants where any of them have failed; but this should be done in a moist season.

At this time look over your wall and espalier fruit trees, and rub off all foreright buds, and tie in such branches as are loosened or irregularly placed: By this means your fruit will have the advantage of sun and air to ripen them and give them a good flavour.

You should now go over your vines also, pulling off all the trailing shoots, and wild wood, which are produced from the sides of the eyes; these, if suffered to remain, will not only weaken the fruit branches, but also obstruct the sun and air.

Mow the grass in orchards, that the fruit which now begins to fall may not be hid.

Hoe and cleanse the nursery from weeds, which if suffered to grow will exhaust the strength of the ground, and greatly weaken the trees.

Place glass phials with sweet water in different parts of your walls to destroy wasps and flies, which are great enemies to wall fruit.

Gather snails morning and evening, but especially after a shower, for they also are great enemies to stone fruit.

Transplant seedling pinks, hollyhocks, carnations, campanulas, French honeysuckles, and other fibrous rooted flowers planted in April. Take off layers from the old roots of carnations, pinks, sweet-williams, and such others as are rooted.

Cut and trim hedges, clip box edgings, mow grass plats, and roll gravel walks.

About the fourth of July, sow some early Yorkshire cabbage seed, and about the seventh sow some sugar loaf seed; these will come to loaf early in the spring.

ART. VIII. *Dissertation on the Winds.* Concluded.

A Wind that blows from the sea is always moist: in summer it is cold; in winter warm, unless the sea be frozen up. The cause of this is very demonstrable: There is a vapour continually rising out of all water; this vapour increases in proportion as it is exposed to the sun's rays; in which case the evaporation is greater than is commonly imagined. By this means the air incumbent on the sea becomes impregnated with a great quantity of vapour; but the winds blowing off from

from the sea, sweep these vapours along with them, and consequently are always moist. Water in summer imbibes less heat than terrestrial bodies exposed to the same rays of the sun; but in winter, sea water is warmer than the earth when covered with frost and snow.

Therefore, as the air contiguous to any body partakes of its heat or cold, the air contiguous to sea water will be warmer in winter, and colder in summer, than that contiguous to the earth. Again: vapours raised from water by the sun's warmth in winter are warmer than the air they rise in. Fresh quantities of vapour, therefore, rising, and continually warming the atmosphere over the sea, will raise its heat beyond that of the air over land.

Winds blowing from the continent are always dry; warm in summer and cold in winter: For there is much less vapour arising from the earth than from the water; and therefore the air over the continent is impregnated with fewer vapours:—And the vapours or exhalations raised by a great degree of heat out of the earth, are much finer, and less sensible, than those from water.—The wind, therefore, blowing over the continent, carries but little vapour with it, and on that account is dry.

Again—the earth in summer is warmer than water exposed to the same rays of the sun.—Hence, as the air partakes of the heat of contiguous bodies, that over the earth will in summer be warmer than that over the water.

Our northerly and southerly winds, however, which are commonly reckoned the causes of cold and warm weather, are, as Mr. Derham observes, rather the *effect* than the *cause* of the cold or warmth of the atmosphere.—Hence it is, that we frequently see a warm southerly wind on a sudden changed to the north, by the fall of snow or hail; and that in a cold frosty morning we see the wind north, which afterwards shifts about to the southerly points, when the sun has well warmed the air; and again, when the cold evening comes on, turns northerly or easterly.

Now because all the heat or cold of wind proceeds from the heat or cold of the country where it blows, therefore the same winds are hot or cold every where.

Beyond the line they are just the reverse of what they are with us; their cold winds are from the south, ours from the north; and as our south winds are warm from no other reason than because they bring us air that is heated by the sun, for the very same reason the north winds are warm to our antipodes.

Winds

Winds are the causes of the most sudden and extraordinary alterations in the air. In our climate a south wind generally brings some rain; a west wind more; and the latter is the predominant wind with us, because the ocean lies to the west of our country.

A north and east wind brings fair weather to us in the general. When the wind turns to the north-east point, and continues in it two days without rain, and does neither turn to southward nor rain the third day, then it is likely to continue eight or nine days without rain, and return to the south.

If the wind turn from the south to the north east, and continues two days in that point without rain, and neither rains nor turns to the south the third day, it is likely to continue north-east for two months, and often for three months.

When the wind is south, if it proves fair weather for a week together, (which is not usual) it is likely to be a great drought.

The wind generally turns from north to south without rain, but comes back again into the north very strong with storms of rain or hail. The greatest winds, which blow down trees and houses, usually come by the turning of the wind out of the south by the west into the north, which drives away rain, and clears the air.

In whatever point the wind is, it will soon turn to the south, when the sun rises with pale spots appearing in its orb, and partly hid in a cloud.

If pale spots seem to appear in the orb of the sun at his setting, and dazzle there, strong winds from the south will shortly ensue. A red lowering morning, and reddish fiery spots on the sun's orb when setting, denote much wind.

If the moon when at full has a reddish circle about her, it presages much wind.

Lord Bacon tells us, that when the sea resounds on the shore, or a hollow murmur is heard in the woods without any apparent wind, they portend that high wind will soon follow. When the brightness of the smaller stars is on a sudden obscured, it is a sign of a tempest arising.

If a hasty shower of rain falls when the wind has raged for some hours, it soon abates.

If when it rains, frequent bubbles are seen to rise in the water, the storm will be of but short continuance.

If sparrows chirp merrily, and moles come out of their holes, it is a sign the storm will soon cease.

When meteors shoot along the air, and spread a long train of light, depend on it much wind will soon follow.

ART. IX. *Observations on the Oak and Planting. Continued.*

[From the New Edition of Evelyn's Sylva, by Dr. Hunter.]

I Now proceed, secondly, to the raising an Oak Wood from the acorn.—Having the ground prepared, as before directed, for the reception of the young oak plants, and having a sufficient quantity of acorns, all gathered from under the most vigorous, healthy, and thriving trees, proceed to their planting in the following manner: In the months of February and March, let lines be drawn across the ground for the rows, between which let there be four feet distance; but if this be thought too great an interval, the rows may be made at three feet, in which case the acorns must be put down at somewhat a greater distance from each other. Then, having sticks properly rounded to make the holes, plant the acorns by the side of the lines, at the distance of ten inches asunder: let them be put down about two inches below the surface, and see that the earth be properly closed by the planting stick, to prevent mice, or crows, from injuring the seed. In some places it is customary to sow the acorns after the plough; but where the ground happens to be stiff, great care should be taken not to cover the seed with too thick a furrow. As in this manner of sowing, the plants will come up very irregular, the mode of thinning must be left to the discretion of the planter.

The first year after planting the acorns, the weeds must be kept down by hoeing and hand weeding; and this must be done early in the spring, before the weeds get so strong as to hide the tender plants, which would occasion many of them to be destroyed in cleaning. Weeds cut in their tender state, immediately die; whereas when suffered to grow old and strong, they frequently grow again, especially if rain falls soon after; and when suffered to stand till their seeds ripen, they thereby poison the soil of the whole plantation.

The second year of their growth, in extensive plantations especially, the double shelving and common plough may be used, as before directed, to keep the ground clean; and this culture should be attended to until the plants become so large that it will not be in the power of the weeds to injure them. As plantations of oaks from the acorn are rather precarious, it will be right to form a small seminary in the same field to repair the intervals that may have miscarried. And here it may be necessary to observe, that this seminary should be made in the best part of the field, and in the warmest situation, that the young

young plants may have good roots, without which they would make but an indifferent progress when planted out.

Having thus given directions for the raising of woods, both by young sets, and from acorns, I now proceed to their future management, which must be the same in both.—And first, the rows being four feet asunder, and the plants two feet distant in the rows, they may stand in this manner for twelve or fourteen years, when every second plant may be taken out and sold for hoops or small poles. This, however, with respect to time, is only a general rule, as the different goodness of land will make a great variation in the growth of the plants; and consequently if the trees take to growing well they will want thinning sooner. This business therefore must be left to the discretion of the person intrusted with the care of the plantation.

After every second plant is taken away, let the roots be grubbed up, not only because they will pay as fire-wood, but that more room may be given for the standing plants to extend their roots freely.

The plants being now four feet asunder each way, they will require no more thinning for seven or eight years; when the healthiest and best thriving trees should be left to stand for timber, and the others cut down for poles, and their roots left to produce future underwood.

In this manner also, the rows filled with plants from the nursery must be managed, in which case we can speak with precision with regard to thinning. In rocky and mountainous soils, the plants or acorns must be put down irregularly by the spade, and the planter must be directed in this operation, by the particular circumstances of soil and situation.

In all cases of planting, shelter and warmth are particularly required. Where the plantations are flat it may be advisable to skirt the wood with scotch fir, which, being a hardy and quick growing tree, is well calculated for this purpose.

Birch is sometimes put between the rows of oaks, and in mountainous situations this is a good method. Others recommend the fir for this purpose; but it is apt to vegetate too fast, and overtop the oaks.

I shall now consider our plantation as far advanced, in which case particular attention should be paid to the trees planted for timber. These should stand from twenty to thirty feet distant from each other, which will not be too near where the trees thrive well; in which case their heads will spread, and meet in about thirty or thirty-five years; nor will this distance

be so great to impede the upright growth of the trees. This distance is recommended, that the trees may enjoy the whole benefit of the soil; therefore after one crop of the underwood, or at the most, two crops are cut, I would advise the stubbing up the stools, that the ground may be entirely clear for the advantage of the growing timber, which is what should be principally regarded; but in general, most people, inconsiderately, attend more to the profit arising from the growth of underwood, than to the future good of the timber, and frequently by so doing spoil both; for if the underwood is left after the trees have spread so far that their heads meet, the underwood will not be of much worth; and yet by their stools being left they will draw away a great share of nourishment from the timber trees, and retard them in their growth.

Such gentlemen as are desirous of raising oaks to plant out for standards, either in parks or fields, for clumps or avenues, must train them in the following manner: Having raised them in the seed-bed, as was directed for woods, let them remain there two years; after which a piece of good ground must be prepared for their reception, where they must grow till they are of a size sufficient to be planted out where they are designed to remain. This ground must be trenched or double dug; then, taking the plants out of the seed bed, as before directed, let a man and boy plant them upon this double dug ground, at the distance of two feet row from row, and a foot and half asunder in the rows. Every winter, until the plants are taken out of this nursery, the ground should be dug between the rows, and this is what gardeners call turning in. They will require no other pruning than taking off any unsightly side shoots; or, where the tree is inclined to be forked, taking off the weakest branch.

When they are ready to plant out for continuance, take the trees carefully out of the nursery, and then prune the roots, observing to let the wound made by the knife be downwards: next take off all bruised and broken parts of the root: and having round holes prepared three feet in diameter, and near two feet deep (the sward being worked and chopped small in the bottoms of the holes with some mould laid to cover it) plant the trees in such a manner that the top of the roots may be nearly level with the surface of the ground. Let the finest of the mould which was immediately under the turf be preserved to lap the root in; and, after the hole is filled, let the earth be pressed down with the foot to settle it properly. A little litter

litter should be laid over the root* to prevent the wind and sun from drying the mould, and thereby retarding the growth of the tree, which when planted in the spring they are apt to do. These young trees should then be staked to secure them against winds; and hurdled if they are planted where cattle or deer can come.—After this they require no further care.

Oaks will not aspire to such height, or fineness of trunk, when planted in these places, as they do in woods; but they will form more beautiful heads, and their shade will be very extensive.

The oak will grow and thrive upon almost any soil, provided the trees be properly planted, although we cannot suppose their growth will be equal in all the sorts. A rich deep loamy earth is what oaks most delight in; and in such soil they will arrive at the greatest magnitude in the fewest years; though they grow exceeding well in all clays and even on sandy soils, in which last the finest grained timber is produced. Many fine trees of this texture may now be seen growing upon Nottingham forest, particularly at Welbeck.

Having thus given a minute detail of the different methods of raising an oak wood from the acorn, the seed-bed, and the nursery, we are now arrived at a very important and interesting question, Which makes the best timber? Mr. Evelyn decides for sowing; and if a careful observer will look into the woods that have been sown, and at the same time examine such as have been planted, he will not hesitate a moment to declare in his favour. The extensive plantations that have been carried on for these many years past, have been made more with a view to shade, shelter, and ornament, than to propagation of timber; and, in order to obtain these ends in the most expeditious manner, the owners have in general followed a mistaken notion, and planted their trees too old; so that many of these woods, when they come to be felled, will greatly disappoint the expectations of the purchasers; besides such advanced trees, when drawn from the nursery, unless planted in a good soil, will never come to timber; on the contrary rocky and poor soils may be made to produce excellent timber by judiciously

* We beg leave here to remark, that Litter laid at the roots of new planted trees is liable to two inconveniences:—First, it is apt to be blown away by the wind.—Secondly, litter often (when rotten especially) contains many insects, with their ova or eggs, which often injure the bark of the trees. Would it not therefore be better to cover the surface of the mould with green sods? We know some skilful planters who adopt this method.

ciously sowing the seeds, and carefully defending the young plants from the browsing of sheep and cattle, or the cropping of hares and rabbits. By this practice, the plants are attached to their native earth, and are strangers to the inconveniencies that trees drawn from a nursery are exposed to.

[To be continued.]

ART. X. *Observations on the best method of making Hay.*
In a letter from an Essex Farmer, to the Editor.

S I R,

THE great secret of making hay well, is to preserve as much of the sap as possible without endangering its heating on the stack. All farmers agree in this, and yet differ widely in the mode they use for that purpose. To describe all the different methods would tire the reader's patience without affording him sufficient instruction to compensate his trouble in comparing them: I shall therefore confine myself to what from long experience I have found the best. A crop of ryegrass and yellow clover ought to be spread as soon as cut: In a day or two, rake it into parallel rows along the field called wind-rows. After turning the rows twice, make it into small cocks. If no rain falls, you may the next day put two or three of these small cocks into one; observing always to mix the tops and bottoms together, and to take a new place for each cock, that the least possible damage may be done to the grass. When sufficiently dried proceed in putting these cocks together into larger ones to prevent injury from rain. Each of these large cocks may contain twenty of the former, if they are properly dried when put together. In a country so liable to wet as ours is, it is of the utmost consequence to be expeditious in drying hay and corn.

With respect to hay intended for horned cattle, it is generally held an improvement that it be heated a little in the stack; but I am fully convinced this doctrine was invented to excuse indolent management. All heat produces fermentation, and the juices of hay are certainly far the best in their natural state; for every degree of fermentation is an approach towards corruption. An ox, it is true, will eat hay that has been heated; but I have always found that he prefers good sweet hay which is certainly the most nourishing.

The making trefoil (or red clover) into hay requires more care.

care. The best season of cutting is the last week in June, or when the spring has been backward, the first in July, when the plant is in full bloom: It may be cut earlier, but never later; For although by letting it stand longer it will produce a heavier crop; yet a late first cutting makes the second late also; perhaps too late for drying. At the same time the want of weight in an early first-cutting is amply repaid by the goodness of the quality, and additional weight of the second crop.

The additional labour required to make hay of red clover, arises from the largeness of the stem, and the hazard of the leaves dropping off in moist weather. I have tried two methods. One is, to let it lie in the swarth two days, and longer if the weather be unfavourable;—If the weather is dry let the swarths be turned over twice every day; it will then be ready to put into small cocks. After two, three, or four days, according to the weather, put these cocks together till ready for large cocks. The other method is more expeditious, and may be ventured on where rye-grass is mixed with the clover. Stir it not the day it is cut; turn it in the swarth the forenoon of the next day; and in the afternoon put it into small cocks: The third day put three cocks into one, and so continue to increase their bulk till fit for carrying to the rick.

When hay of the second crop is made in an unfavourable season, mix straw with it, which will render it a substantial food for cattle during winter. This is best done by laying a thin stratum of straw between two of the clover when stacked. But this is a method I do not altogether approve; for the layings of clover, so made, are apt to turn mouldy, and unpalatable—the better way is to mix the straw and hay properly before they are laid on the stack. I must add one general observation with respect to hay of all kinds; and that is, that if the weather be so wet as to prevent cocking in the ordinary time, there ought to be no intermission in turning the swarths, which will best help to evaporate the moisture, and prevent the bottoms of the swarths from sinking to the ground among the uncut grass.

The expence of making an acre of rye-grass, and yellow clover, in a tolerable season, is from five to seven shilling; and of red clover about one shilling more. In a bad season it will often cost near double that sum.

I will not detain you by adding any rules for making common meadow hay; it being supposed that every farmer knows how to manage that in the best manner.

I am your constant reader,

T. SMITH.

ART. X. *On the Means of Fertilizing Soils, by Plowing,*

THERE are mutual connections between man, and the ground he treads on, that fit them for each other. The dry part of the globe is every where cover'd with a stratum of earth, producing vegetables for the nourishment of man, and other animals.

Some strata there are, so barren, as not to produce vegetables; and some vegetables afford no nourishment: but both are rare, and intended probably for other purposes.

This stratum is in general sufficiently deep for a free course to the roots of plants, or may be made so by art; for it is one of the many purposes of agriculture to deepen a shallow soil. A deep soil, besides giving free course to roots, retains much water to nourish them.

The advantages of deep ploughing are manifold. In the first place, roots extend far where they meet no resistance, and the growth above the surface corresponds with that below: Roots cramped in a shallow soil are dwarfish, consequently so is the tree. Dr. Hales justly observes, that the greater proportion the surface of the roots bear to that of the tree, the greater is the vigour of the tree. In a deep soil the roots will not only spread kindly, but retain their moisture without being injured by the water standing, or settling long about them. When the roots are soaked in water (as they must be when great rains fall on a shallow soil) the trees grow sickly, as appears by the yellowness of their leaves: Therefore in transplanting trees, take care not to give them too much water, which chills and rots the young fibres.

A deep soil affords space for the seeds of grain to shoot their roots every way: In a shallow soil, if the seed be laid so deep as to be sufficiently covered from the birds, its roots soon approach the hard bottom, which is very unkindly to them.

A stiff soil is not easily penetrable by water; loose soil does not retain it. Deep ploughing diminishes the tenacity of the former, and opens it to receive water; it makes the latter more compact, and increases its power of retaining water.

Some kinds of earth fill not the hole out of which they were dug: some will more than fill it. Porousnefs occasions the former; by ploughing the pores are diminished, and the earth is rendered more compact: solidity occasions the latter; clay swells by stirring, and is rendered more porous.

Another advantage of ploughing regards clay chiefly, which by moisture turns hard if not duly stirred: this is an important article. Sand has no cohesion, and dries clay very little

if

if any. It is water that cements clay, and in ploughing makes it rise in lumps or clods. Ploughing prevents water from binding a clayey soil: By frequent ploughing the superfluous moisture is exhaled, and no more left but to give the clay a degree of cohesion sufficient for fixing the roots. The nice point is the time of applying the plough after much rain; if you plough it too wet, the parts will be kneaded together: on the other hand, the ground must not be suffered to turn hard. During winter, clay may be stirred in a moister state than during summer. Frost prevents cohesion: Heat promotes it. The management of a light soil is very different: it is easily pulverized, but the difficulty is to preserve its moisture. A long drought, by extracting much of that moisture, renders it the less fit for vegetation; to plough it in dry weather would render it entirely unfit. The only remedy is rain; and if drought set in, it ought to be rolled immediately after ploughing. The proper time for sowing and harrowing is when there is no more moisture than is sufficient to give the soil a proper consistence; and we conjecture, that the same degree of moisture is the fittest for making the seed to spring. A certain degree of moisture is necessary, for fermentation: too much checks it. Let rolling immediately follow, to prevent as much as possible any farther evaporation. Where seed is to be sown in winter, or early in spring, it is best to plough some time before, that the superfluous moisture may evaporate; for at that season there is no fear of exhausting the moisture. But, late in the spring, if the season be dry, sow the seed immediately after ploughing. The plants, in their course of growing, return to the soil during night, part of the moisture they draw from it during day. Their roots at the same time, spreading in every direction, keep the soil in constant, though imperceptible motion, and prevent it from turning hard.

We shall close these remarks on ploughing, with an effect the most important of any, because it holds in all soils less or more. Ploughing keeps the soil loose for roots to take their natural course, and open for admitting air, dew, and rain. Dew in particular, which falls in plenty during summer, when most wanted, is lost upon hard soil, being exhaled by the next sun; but it sinks deep into loose soil, and is there sheltered from the power of the sun's rays. Ground stirred before winter, is not only laid open to the action of the sun, wind, and frost, but is early ready for a spring crop; beans in particular. It soon wets indeed, but it dries as soon. The more earth is pulverized, the more water it will hold; and the

more parts water is divided into, the more readily it is imbibed by the fine sap vessels of plants.

How beneficial it is to keep the soil open for the admission of nutritive matter, will appear from the following facts: A stiff soil gains little by rest; for as rain and dew get no admittance, they are soon carried off by evaporation: But a soil tolerably open improves much by rest.

Notwithstanding what has been said by some writers, we apprehend that land gains but little by the pasturing of cattle; for what they carry away in fat, with what they perspire, will nearly ballance the dung they leave: But it gains much by the nutritive matter that rain and dew deposit in it: the rain may evaporate, but it leaves its nutritive matter. This case resembles salt deposited in the sea by rivers. Water is evaporated from the sea, but the salt is left behind; and hence the saltness of the sea. The nutritive matter thus left in the earth is again diluted into rain water; and though not attracted by the air, is attracted by plants, and enters into the orifices of the roots along with the water in which it is dissolved. There is another cause that has a share in the improvement of an open soil, and that is Air, which with its contents enters into the bosom of an open soil by attraction. The operation is indeed slow, because the attraction has no effect but in contact, or near it; yet in time the quantity of nutritive matter attracted with air may be considerable. The rubbish of a mud wall will make good manure, tho' the mud may have been taken from a very poor soil. Grass sods, used as covering for cottages, turn to good manure when they have laid long on a house;—the walls of a sheep fold, when composed of sods, make good manure: When thrown down and mixed with the soil, they afford a better crop than the fold within, though enriched by the dung of the sheep.

Among many advantages of fallowing, the exposing to the air a new surface from time to time is one; for by that means every part of the soil draws air with the vegetable food it contains.

ART. XII. *General Heads of a Lease for a Corn Farm.*

To the EDITOR of the FARMER'S MAGAZINE.

MR. SYLVAN,

AS I have received some advantage as well as pleasure from the Farmer's Magazine, I wish, in return, to contribute something that may be of service to the rest of your readers.

Whether

Whether what follows be admissible on your plan, I will not take upon me to determine; but if it is, your inserting it in your next number will be a proof of your approbation. I have divers estates in one of the eastern counties, on which my tenants live comfortably, and every year lay up something against the winter of age. This, I have in some measure enabled them to do, by letting my farms at moderate rents, and granting my tenants leases on such terms as enabled them to take every fair advantage of unfavourable seasons, without injuring my estate. As I never wish to oppress, but rather to encourage an industrious, good tenant, the leases I have given them on corn lands principally consist of the particulars contained in the following

General Heads of a Lease for Corn Lands.

In a lease of this kind, two principal objects ought always to be kept in view, and nothing should be inserted that is incompatible with either: The first is to restrain the tenant from impoverishing the land: The second, to leave him at full liberty to improve it, and even to give him encouragement so to do. In this variable climate the tenant must not be tied down to invariable rules of cropping: An unusual season, be it hot, cold, dry, or wet, will necessitate him, for a year at least, to deviate from the best plan of cropping that can be contrived before hand.

This, however, is not intended to banish rules altogether. Some tenants, like some kings, may be trusted with unlimited powers: But such persons would be no less destructive to the generality of tenants themselves than to their landlords.

Tenants, therefore, like kings, must be fettered; but in what manner, and to what degree, is a question no less difficult than useful. They ought never to be fettered so as to bar improvement, nor left at liberty to do mischief.

Different situations with regard to manure, soil, and climate, require different modes of husbandry. All that can be done in an attempt like the present, is to give a few general rules for a landlord to chuse upon in granting leases: It is his business to judge which of these rules will best suit his situation.

The first respects the *time*: It is become a general opinion that without granting a long lease it is in vain to hope for an improving tenant. The most approved time of endurance, as the likeliest to prevent waste, is to fix it certain: Suppose nineteen, or two nineteen years; and to add the life of the te-

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nant, who is in possession at the expiration of the term certain. A man never loses hope of living longer; and he will never run out ground that he hopes yet to be long in possession of.

By this means the tenant is innocently deluded into a course of management equally profitable to himself, and to his landlord. But suppose after liming, marling, or using any other expensive manure, the tenant happens to die suddenly before he reaps any profit? With a view to that event, let there be a clause in the lease for paying to his representatives what sum the tenant's profit has, in the opinion of good judges, fallen short of the expence.

Secondly, Assignees and subtenants ought to be excluded. For where a tenant has it in his power to make his lease a subject of commerce, he will be sparing in laying out money on improvements.

Thirdly, Whether the rent ought to be paid in corn or money (in North-Britain especially) depends on circumstances: *Corn Rent* cramps the tenant in his management; for it obliges him to sow, yearly, corn of the kind with what he pays, whether his lands are in order for it or not. *Money Rent* on the contrary promotes good culture, in order to produce the weightiest grain, the benefit of which centers wholly in the tenant. There is an additional reason for *money rent*, that the tenant, by prudence and patience, can draw a better price for corn at the home markets than the landlord can. The rent therefore ought to be paid in *money*, unless where there is a superfluity of corn for exportation; which can be managed with more advantage by the landlord, than by the tenant.

Fourthly, In this country the profit of grass is not sufficiently understood except by a few. Corn is the object of the generality; and that wrong bias ought to be rectified by a clause confining the tenant to a certain proportion of his ground in corn, a third, for example, or an half. There cannot be a fixed general rule, because it varies with the nature of the soil, and still more so with the opportunity of manure, but an addition to the proportion of corn may be indulged on condition of paying — shillings more rent for every acre above the proportion originally agreed on.

Fifthly, A clause prohibiting white corn crops to be taken in immediate succession, will be an effectual bar against impoverishing the land. Pease, beans, turnips, cabbages, and potatoes, are profitable crops; and red clover may be rendered more profitable than any of them, by seeding all the farm cattle upon it, which will save many acres of pasture.

Sixthly

Sixthly, The following, or some clause to the same import, will excite a tenant's highest industry to improve his farm to the utmost, supposing it to be only nineteen years. At the expiration of the lease, the tenant shall be intitled to a second nineteen years, on paying a fifth part more rent, unless the landlord give him ten years purchase of that fifth part; the rent for example is 100l. The tenant offers 120l. He is intitled to continue his possession a second nineteen years at the advanced rent, unless the landlord pays him 200l. If he offers a still higher rent, the landlord cannot turn him out, unless he pays him ten years purchase of that offer.

Seventhly, As both landlord and tenant are concerned in preserving the fences, both ought to concur in the expense. Therefore let the care of the fences be trusted to the landlord's hedger; and whatever work is bestowed on the tenants fences shall be paid to the hedger at so much per day.

Eighthly, In order to preserve to the landlord a privilege to plant trees, which is commonly neglected in leases, I propose that out of the lease be excepted certain spots, proper to be planted, for shelter and for ornament, or as not being arable: The landlord to inclose and plant, the tenant to carry the stones or other materials for inclosing. To encourage him to preserve the trees, let him have the whole weedings for the purposes of his farm.

Ninthly, In a tenant two things are required; first, skill and industry for managing the farm; and next, money for stocking it sufficiently, without which skill and industry will not avail. With respect to both, our laws err grossly. As to the first, a farm can never be well managed by several persons; for, as the proverb is, *so many men, so many minds*; and yet, by law, heirs portioners succeed in a lease, as well as in other heritable subjects. To remedy the common law in leases that go to heirs, let it be provided, that the eldest heir shall succeed without division; or that the landlord shall chuse any of the heirs that he pleases. With respect to the other point, our common law is altogether unjustifiable, as it gives the whole stock to the other children, leaving the bare lease to the heir, often without means to stock the farm anew. This is cruelly unjust both to the heir and to the landlord; the heir has not even the benefit of collation, because it would bring a plurality of conjunct lessees upon the landlord, and therefore is, in effect, disinherited. The injustice with regard to the landlord is no less flagrant, who has thus a tenant imposed on him, from whom no rent can be expected. Let therefore a sum be specified

specified in the lease, which may be sufficient for stocking the farm; which sum the heir shall be entitled to demand from his predecessor's representatives, unless the farm be left to him with a stock equivalent in value.

I am, Sir, your constant reader, and humble servant,
Holkham, Norfolk.

J. JOHNSON.

[Our best thanks are due to this correspondent; whose future correspondence we intreat.]

ART. XIII. *Reference to the Drill-Plough and Horse-Hoe.*

[Accurate Engravings of which are given in this number.]

THE land being first prepared to receive the seed, the drill plough is used to sow it in strait lines, and drop it at equal distances; the depth of the furrow is regulated by raising the beam higher or lower upon the front wheel; the large wheel turns a steel roller, which is indented with smaller or larger spaces, according to the size of the seed to be sown, and the distance required between each dropping; and different rollers (which are easily exchanged when necessary) are prepared for each sized grain, the screw handle in front of the hopper, prevents a larger quantity of seed from passing the roller than is required; by this means the same frugality is preserved, whether the seed be large or small; the small iron handle behind the large wheel stops the seed when it ought not to fall; the share then forms the furrow, into which the seed is dropped at any required distance or depth, and the triangular harrow behind turns the furrow into a ridge, the seed being buried at any depth that may be necessary; and exact distances of the lines may be preserved by observing the mark of the large wheel upon the ground, over which mark it must be brought again on its return with a new line.

THE HORSE-HOE.

The Horse-Hoe is an appendage to the drill plough, and the print explains its use. After the plants are sprung up in strait lines, the horse-hoe must be drawn between each row, which effectually destroys the growing weeds; and the hindmost share being moved higher or lower, will throw a greater or less quantity of earth towards the young plants, as the user may think proper.

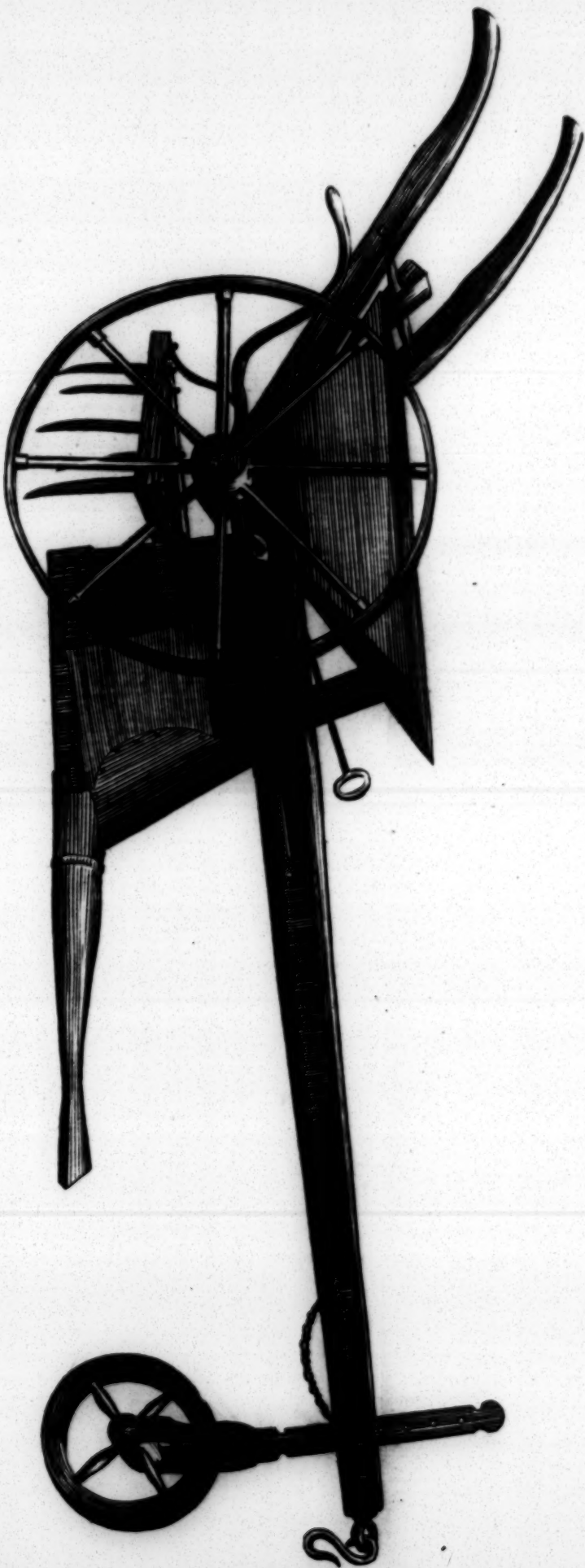
June 10, 1777.

JAMES SHARP.

[The Editor presents his respectful compliments to Capt. Hinde, and as he finds on comparison that his plough differs from Mr. Sharp's, he has ordered Capt. Hinde's plough to be engraved for next month's Magazine.]

ART.



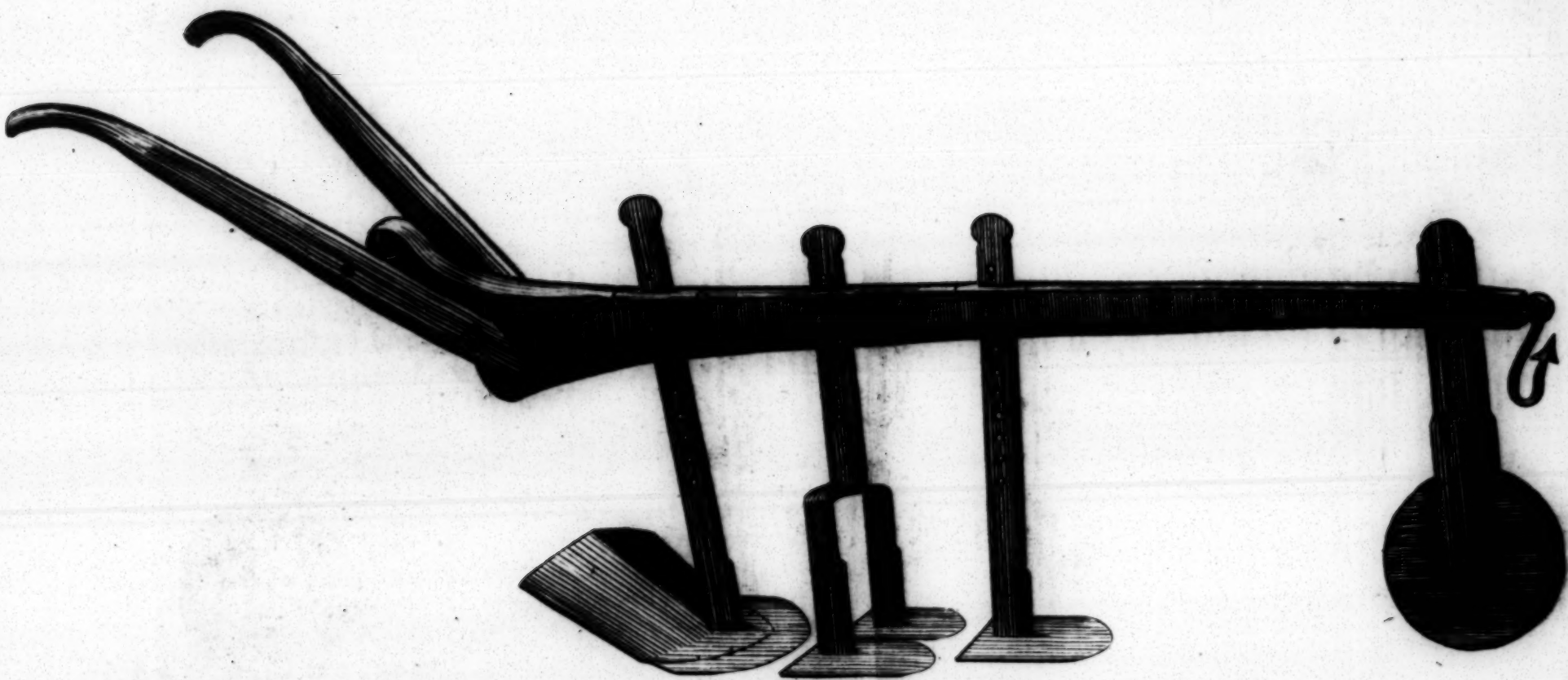


A Drill. Sought for single Drilling

Made & Sold by James Sharp London

W. & A. Sharp & Co. Birmingham





*A Horse Hoe for Weeding and Earthing between the
plants in drill Husbandry*

Made & Sold by James Sharp Leadenhall Street London

Miles sculp. Borough



ART. XIV. *On Turnips, and the succession of Crops.*

Mr. SYLVAN,

THERE are several methods of getting land into order again, which has been injured by too long continuance of successive corn crops; but amongst all, none is superior to turnips, on such land as will bear them to be fed off with sheep; and the advantage of a summer fallow is greater than without them, on the proper soil.—Vetches are a very good improver of land, and an exceeding beneficial one, as observed by your correspondent *A Berkshire Farmer*, in your magazine page 87, but these are chiefly proper for strong land, while turnips will flourish best on light sandy soils; in the choice of turnips, particular care should be taken in the seed, and change is always best for the land; that is, it is not so well to sow seed which grows at home; perhaps no turnips are better for general use, than those cultivated in Norfolk, Essex, &c.

After the land destined for turnips has yielded its last crop, as soon as the wheat sowing season will admit, let it be fallowed down in a husbandlike manner, and if need be, let it be water-furrowed, as if for wheat or any other grain, in the driest manner possible; let it thus continue all the winter till about the beginning of March, or before; if the weather prove dry, let the furrows of the last ploughing be thrown back by a fresh ploughing, and in a few days after, let the ground be dragged well with heavy drags, and laid by them as flat as possible; then plough across, or stir it, as it is called; by this time the land becomes a little mellowed; again it should be dragged, rolled, and harrowed, the roller and drags will break and divide the soil, and give power to the harrows to draw up the couch and clutter to the top; then put on horse-rakes and collect the rubbish into heaps, which if dry may be burned or carried off the land, which I would rather advise the first time and not wait for its drying.—Plough the land the direct way, drag, roll, and rake again—then stir and continue the use of the roll and rakes, and if need be of the drags. By this time the land will be got tolerably clean; if so, let what dung can be spared be spread on the land—if the land is not clean, let it have another ploughing, &c. before the dung is spread on it; then land it up; about the beginning or latter end of July, according as the turnips are wanted to come in, let them be sown in the broad-cast method, or by the drill plough; if by the drill plough, which is by far the most convenient and best for the land, after they come up to a proper height the openings

ings between the plants may be kept clean by the horse-hoe. If not drilled, as soon as they begin to spread their rough leaves, let them be hoed out to a convenient distance, and in a week or two they will want a fresh hoeing.

Turnips are very good food for cows in the winter, but the great advantage accruing to the farmer from them to the land, is by feeding them off by sheep, which, added to the manure before spread, enriches the land and scarce fails to produce a good crop of barley or oats the succeeding year, as well as clover the following.

In the winter after the barley or oats are removed from the land, as early as possible, let the clover be dressed with such manure as can be best spared: nothing pays better; and after two crops of clover are taken off, wheat may be sown at one ploughing to the greatest advantage. This system of husbandry, which is adapted to light, dry, lively land is not excelled or scarcely equalled by any other. For the advantage of your readers, I have calculated the expences, and ballanced them by the receipts.

£. s. d.			Brought up, £. 5 9 6		
1774. Turnips, 5 ploughings,			1776. mowing and making		
at 7s.	1	15 0	clover,	0	12 0
4 drags, at 2s. 6d.	0	10 0	plowing for wheat har-		
4 rollings, at 1s.	0	4 0	rowing, &c.	0	10 6
4 harrowings, at 1s. 6d.	0	6 0	water furrowing,	0	1 0
2 hoeings,	0	9 0	seed 2 bushels, at 6s.	0	12 0
			1777. weeding,	0	1 6
1775. Seed,	0	0 6	reaping,	0	8 0
3 ploughings,	1	1 0			
harrowing and rolling,	0	4 6	rent,	4	0 0
seed barley, 3 bushels,	0	10 6	tithe,	0	16 0
clover seed, 8lb. at 7d.	0	4 6	rates,	0	16 0
mowing, &c.	0	4 6			
			£. s. d.		13 6 6
PRODUCE. { Turnips,	—	3 0 0			
{ Barley,	—	6 0 0			
{ Clover,	—	4 10 0			
{ Wheat, 3 qrs.	—	7 4 0			
			20 14 0		
			13 6 6		
			Balance, £. 7 7 6		

In this calculation I have inserted every expence attending the crops, except dung and threshing, for which, on the profit side, I omit feed, straw, and the advantage of fodder: I have set the turnips at no more than they will produce one year with another; if white oats are sown instead of barley, they will produce less profit; but at the same time, one ploughing will serve instead of three, which will take off 14s. from the expence;

pence; with regard to the advantage of live stock, the corn profit united together, no change will in all probability be for the better; but sometimes it may not be amiss to let the clover lie two years, and at breaking up sow with pease or beans, and then with wheat.—I once knew a young man, who was a most excellent farmer, if it may not be said, that he expended too much in the improvement of his farm; it was a maxim with him to cross crop his ground continually merely for change; I have known him after turnips, sow black oats, then winter vetches, then wheat,—but his most general practice was, on such of his land as would suffer it, the course of crops already pointed out. His crops were very great indeed, considerably more than what I have set down; but I drew not the observation from his crops, but my own. Persevere, Mr. Sylvan, in making your Magazine a collection of every thing that is useful to the farmer, as you have begun, and you need not fear success. I am, your most obedient servant,

Berkshire.

R. S.

* In about ten years he paid 100*l.* for draining and chalk. His name was Wm. Lane, he lived near Wokingham, Berks, his farm not above a hundred a year.

ART. XV. Premiums for Planting and Husbandry, offered by the Society for the Encouragement of Arts, Manufactures, and Commerce.

NATURAL GRASSES. To the person who shall give the most satisfactory account of the value of any two or more of the several natural grasses; the gold medal.

For the account next in merit; the silver medal.

Certificates to be delivered the first Tuesday in February 1778.

The same premiums will be given for natural grasses the succeeding year.

An account to be produced the first Tuesday in February 1779.

Green Vegetable Food. For the best account of the Vegetable Food, growing in the months of March and April, that will most increase the milk in mares, cows, and ewes, at that season; the gold medal.

Certificates to be produced the second Tuesday in Nov. 1777.

The same premium is extended one year further.

Certificates to be produced the second Tuesday in Nov. 1778.

Mixture of Grass Seeds. For the best experiments to ascertain the most advantageous mixture of different seeds for laying down arable land to grass, on wet or strong soils; the gold medal.

An account to be delivered the first Tuesday in January 1780.

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The same premium will be given for ascertaining the most advantageous mixture of different seeds for laying down arable land to grass, on dry or light soils.

The same premium is extended one year further.

The accounts to be produced the first Tuesday in January, 1781.

Sowing Burnet with Natural Grasses. For an account of the best experiments of sowing Burnet with Natural Grasses. To be delivered the first Tuesday in Dec. 1777; the gold medal, or 20l.

The same premium will be given for sowing Burnet with Natural Grasses the succeeding year.

Certificates to be produced the last Tuesday in December, 1778.

Turnep-rooted Cabbage. For raising ten acres of Turnep-rooted Cabbage, in the year 1776, for the feeding cattle or sheep; 20l.

For five acres, ten pounds.

Certificates to be produced the last Tuesday in October, 1777.

The same premiums are extended one year further.

Certificates to be produced the last Tuesday in October, 1778.

Cultivating Roots and Herbage for feeding Sheep and Black Cattle. For the most satisfactory experiments made in the year 1776, on strong land, in order to ascertain which of the following plants can be cultivated and housed, or otherwise secured for winter fodder, to the greatest advantage, viz,

Turnep-rooted Cabbage,	Turneps,	Parfneps,
Turnep Cabbage,	Carrots,	Potatoes.

The accounts to be produced the first of November, 1777; the gold medal, or twenty pounds.

The same premium will be given for experiments made in 1777.

The accounts to be produced the first of November, 1778.

Comparison between Roots and Herbs. For an account of the best set of experiments made in 1776 and 1777, to ascertain the comparative merit of the herbs and roots below specified, in feeding sheep or black cattle; to be produced the third Tuesday in October, 1777; the gold medal or twenty pounds.

Cabbage,	Coleseed,	Turneps,
Colewort,	Savoy,	Carrots,
Borecole,	Turnep-rooted Cabbage,	Parfneps,
Anjou Cabbage,	Turnep Cabbage,	Potatoes,

The same premium is extended to the year 1778.

Certificates to be produced the third Tuesday in October, 1778.

By order of the Society,

SAMUEL MORE, Secretary,

ART. XVI. Abstracts of Acts passed last session of Parliament.

The Act for the Cultivation, Improvement, and Regulation of the common Arable Fields, Common Meadows and Pastures, enacts,

THAT by an act passed in the thirteenth year of the reign of his present Majesty, intituled, "An act for the better cultivation, improvement, and regulation, of the common arable fields, wastes, and

and commons of pasture, in this kingdom," it is enacted, that three-fourths in number and value of the occupiers of such common fields, with such consents as therein mentioned, may come to an agreement for keeping the same in particular course of husbandry, for the term of six years, or two rounds, according to the course of each parish respectively:

That the said act has been carried into execution with great advantage in several places; but it appears that the ends of the same might be greatly advanced, and the benefits arising therefrom increased, if encouragement was given to the laying together of the lands of the several occupiers, which lie dispersed in different places in such fields, into more convenient plots for the occupation of the same, and other facilities given to the execution of the several parts of the said act:

The bill enacts, that exchanges may be made according to the directions in the bill, which are to be binding upon all persons who shall occupy such lands, during the term of the agreement. That the compensation to be given for the difference, shall be by payment of a sum of money, and not by any fine. That the lands so exchanged, shall be surveyed and planned, and distinguished by proper bound-houses, the agreement and plan to be lodged in the parish chest, and, if copyhold, inrolled in the Lord's Court. That the lands taken in exchange, shall be subject to the same rights as the lands given in exchange. That a certain quantity of land, not exceeding half an acre, may be inclosed for a foddering yard or sheepcote, or such like convenience, provided it does not obstruct any public or private road. There are directions in what manner the widening of brooks or water-courses may be made straighter, and their course consequently shortened, and the discharge of the waters facilitated; with directions also, for the new channel to be the boundary between such parishes or hamlets. The agreements to be lodged in the parish chest, and with the clerk of the peace. There are likewise directions how, and by whom the expences shall be defrayed. That where land is cut off by straitening the water-courses, it may be sold and exchanged for other lands. That an annual sum shall be paid for the lands cut off. That lessees advancing their rents one-half, may have a further lease granted them. There are clauses, extending certain regulations with respect to common meadows to the persons having a right to common therein, and that all trespasses and breaches of the regulations agreed to, according to the above-mentioned act, may be determined by a Justice of the Peace. And all sums recovered to be employed as the majority of owners and occupiers may order, towards the better cultivation of the said common field lands, or improvement of the said commons of pasture or water.

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The Act for Granting to his Majesty a Duty upon Servants, enacts,

"**THAT**, from and after the fifth day of July, 1777, there shall be charged, unto his Majesty, after the rate of twenty-one shillings per annum for every male servant, within the kingdom of Great-Britain, who shall then have been, or shall afterwards be, in the following capacities; (that is to say) of maitre d'hôtel, house-steward, master of the horse, groom of the chamber, valet de chambre, butler, under-butler, clerk of the kitchen, confectioner, cook, house-parter, footman, running-footman, coachman, groom, or postillion, or in the capacity of gardener, (not being a day-labourer) park-keeper, game-keeper, huntsman, whilper-in, whether such male servant shall have been or shall be retained and employed in one or more of the said capacities; which said sum of twenty-one shillings per annum shall be charged and paid in manner herein-after mentioned; that is to say, every such master or mistress shall be charged fifteen shillings for every such servant so retained or employed within the time which shall elapse between the fifth day of July 1777, and the twenty-fifth day of March, 1778; and every such master or mistress shall be charged the sum of twenty-one shillings for every such servant which shall be so retained or employed within every subsequent year, ending on the twenty-fifth day of March; and the said several sums herein before-mentioned shall be levied and paid in every year, within six months subsequent to the twenty-fifth day of March, on which such charges are hereby directed to be made.

That this act shall not extend to any servant who shall be retained or employed, bona fide, for the purposes of husbandry or manufactures, or of any trade or calling by which the master or mistress of such servant earns a livelihood or profit.

That the duty hereby granted for every coachman, groom, postillion, or helper, let out to hire by way of jobb, shall be paid by the master or mistress for whose use, and in whose service, such coachman, groom, postillion, or helper, shall be employed respectively; and that the duty hereby granted for every gardener, retained or employed by any person or persons who shall contract for the keeping of any garden or gardens, shall be paid by the person or persons for whose use and in whose garden such gardener shall be employed.

That nothing in this act contained shall extend to exempt any person or persons from the payment of the duty imposed by this act, on account that such servant is or shall be bound as an apprentice to such person or persons; save and except such apprentices as are or shall be imposed upon any master or mistress, by virtue of the powers given to magistrates and parish officers by any act of parliament, so as the number of such apprentices so imposed upon any master or mistress does not exceed two.

That this act shall not extend to any of the servants of the colleges of the University of Great-Britain, or of the several Colleges of Westminster, Eton, or Winchester, or to the servants of his Majesty, or any of the Royal Family, or of any Ambassador or Foreign Minister residing in the kingdom of Great-Britain.

That nothing herein contained shall extend to charge with the duty hereby granted, any of the royal hospitals of Christ, St. Bartholomew, Bridewell, Bethlem, St. Thomas, in the city of London and Borough of Southwark, or Guy's, or the Foundling Hospital.

The Act for the more effectual Prevention of the Manufacturing of Ash, Elder, Glor, and other Leaves, in Imitation of Tea, enacts,

"**THAT** any persons (whether dealers in or sellers of tea, or not) who, after June 1, 1777, shall dye or manufacture, in imitation of tea, any leaves of any tree, shrub, or plant, or shall mix, colour, &c. any such leaves with terra japonica, copperas, sugar, molasses, clay, logwood, or any o-

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ther materials, or shall sell, or offer the same to sale, or shall have in their possession any such dyed or manufactured leaves, or any such coloured leaves, or any leaves dying or manufacturing in imitation of tea, shall, on conviction by the oath of one or more credible witnesses, before a Justice of the Peace for the district where the offence shall be committed, forfeit *£*1. for every pound of such leaves, so dyed, mixed, &c. On non-payment the offenders shall be committed to the common gaol for not more than twelve, or less than six months, or till the penalty and charges shall be paid.

The Act for further restraining the negotiation of promissory notes, and inland bills of exchange, under a limited sum, within that part of Great Britain called England, enacts,

1. **T**HAT all negotiable promissory or other notes, bills of exchange, draughts, or undertakings in writing for the payment of any sum from 20*s*. and less than *£*1. or on which 20*s*. and less than *£*1. shall remain undischarged, issued after Jan. 1, 1778, shall specify the names and places of abode of the persons to whom, or to whose order, the same are made payable; and shall bear date before or at the time of drawing, and not on any day subsequent thereto, and shall be payable within 21 days after such date, and shall not be negotiable after that time; and that every indorsement thereon shall be made before the expiration of that time, and bear date at or not before the making thereof; and shall specify the names and places of abode of the persons to whom, or to whose order, the money contained in such note, &c. is to be paid; and that every such note, &c. and every such indorsement shall be attested by one witness at least: and that all such promissory or other notes, &c. as aforesaid, issued in England, after the said Jan. 1, 1778, in any other manner than as aforesaid; and every indorsement, shall be absolutely void.

2. That the publishing, uttering, or negotiating, in England, of any such negotiable promissory or other notes, &c. as aforesaid, issued or made in any other manner than hereby permitted to be published or negotiated as aforesaid; and also the negotiating of such notes, &c. after the time for payment thereof, or before that time, in any other manner than as aforesaid, by any contrivance whatsoever, from the said Jan. 1, 1778, is by the act declared to be prohibited, under the like penalties, to be recovered and applied as by the act 15 Geo. III. is directed.

3. That after the passing the act, all such negotiable promissory notes, &c. as aforesaid, issued before the said Jan. 1, 1778, shall be payable on demand, and shall be recoverable in the manner directed by the said act 15 Geo. III.

Forms of the Notes and Drafts directed by the above Act.

“ London, 1st July, 1777.

“ Twenty-one Days after Date, I promise to pay to Mr. Agricola Sylvan, of Grove-Place, or his Order, the Sum of Four Pounds and Four Shillings, for Value received by
“ Witness C. D.”

“ Bath, 1st July, 1777.

“ Twenty-one Days after Date, pay to Mr. Agricola Sylvan, of Grove-Place, or his Order, the Sum of Four Pounds and Four Shillings, Value received, as advised by
“ R. C.”

“ To W. G. Pater-Noster-Row, London.”

Indorsements are to be in this form:—“ 2d July, 1777. Pay the Contents to K. G. of Bristol, or his Order, A. S.”—“ Witness, W. G.”

* By the act 15 Geo. III. c. 51. (which prohibits the negotiating notes, &c. under 20*s*. value) persons uttering such notes, &c. after June 24, 1775, shall forfeit, for every offence, not more than 20*l*. or less than *£*1. to be paid forthwith, one half to the informer, and the other to the poor of the parish; on default of payment, the forfeiture is to be levied by distress, and the offenders may be retained in custody till the warrant of distress is returned, unless they give sufficient security for their appearance before the justice granting such warrant; and if no distress can be found, the offenders are to be committed for three months, or until they give notice of an intention to appeal to the quarter session.

POETICAL ESSAYS.

NIGHT, An ODE.

By A LADY.

THE glowing landscape fades; day
shuts his eyes; [western hill,
Grey twilight rests on yon high
While pensive in the secret shade I lie,
And watch the music of the falling
rill.

The evening star now skirts th' Atlan-
tic main, [the lawn;
And chilling dews are sprinkled o'er
The rustic drives his oxen from the
plain, [till morn.

And in the fold, secures his flocks
Soft dies along the plain each ruder
breeze; [whirlwinds sleep;
In black'ning clouds the lowering
While gentle gales scarce wave the
trembling trees; [deep.

Or curl the surface of the peaceful
Primeval darkness, now, with poppies
crown'd, [throws,
O'er the dun air her sable mantle
Diffusing universal stillness round,
And locks a drowsy world in calm
repose.

But not so lul'd, the child of sorrow
sleeps; [grief to rest;
Nought charms the tearful eye of
Palevisag'd care his constant vigil keeps,
No gentle slumbers soothes his woe-
fraught breast.

At this still hour the joyless Damon
mourns [early doom;
O'er Celia's bier, and weeps her
While echo from her leaves, his plaints
returns, [cheerless gloom.

Which pierce with many a sigh the
Now from the dreary vault pale spectres
glide, [swain;

As stories tell, to fright the wand'ring
Or dreadful, stalking to the murder's
side, [with pain.

Hang o'er his couch, and fill his heart
While I, still mindful of that awful
power, [his aid,

Who guards the just, sending in
Fearless alone, or trace the secret bower,
Or rove bewild'ring thro' the moon-
light shade:

For now, far beaming from the glow-
ing east,

The silver regent of the silent night,
Slowly ascends, in mildest radiance
drest, [magic light.
And pours o'er woods and streams her
Hail awful silence! Contemplation
hail!

Bright emanation of celestial fire!
All hail thy presence!—still mayst thou
prevail, [inspire.
And all my soul with themes divine

To thee, while night's dim shades in-
volve the sky, [bring;

This solemn verse, a simple gift I
'Tis thine to guide the muses flight on
high, [soaring wing.

Affix her strains, and plume her

The DORMANT ROSE.

CHILD of the Summer, charming
Rose,

No longer in close durance lie;
Arise—thy beauteous form disclose—
Rival the spangled tints on high.

The rains are gone, the storms are o'er,
Winter retires to make thee way:
Come then, thou sweetly blushing
flower,

Come lovely stranger, come away.

The sun is drest in beaming smiles,
To give thy beauties to the day;
Young Zephyrs wait with gentlest
gale,

To fan thy bosom as they play.

The ANT and CATERPILLAR.

A FABLE.

AS an Ant of his Talents superiorly
vain, [the plain,

Was trotting with consequence over
A worm, in his progress remarkably
slow, [ever you go!

Cry'd, "bless your good worship where-
" I hope your great mightiness won't
take it ill, [good will."

" That I pay my respects from a hearty
With

With a look of contempt and inef-
fable pride,
"Begone, you vile reptile," his ant-
ship reply'd:
"Go, go, and lament your contemp-
tible state;
"But first, look at me—see—my limbs
are complete,
"I guide all my motions with free-
dom and ease,
"I run backward, and forward, and
turn when I please.
"Of nature (grown weary) thou
flocking essay,
"I spurn you thus from me—crawl
out of my way.
The reptile, insulted, and vex'd to
the soul,
Crept onwards, and hid himself close
in his hole;
But nature, determin'd to end his dis-
tress, [drest.
Soon sent him abroad in a butterfly's
Ere long the proud Ant, as repassing
the road,
(Fatigued from the harvest, and tugging
his load)
The beau on a violet bank he beheld,
Whose vesture, in glory, a monarch's
excell'd;
His plumage expanded—'twas rare to
behold
So lovely a mixture of purple and gold.
The ant quite amaz'd at a figure so
gay,
Bow'd low with respect, and was trud-
ging away:
"Stop, friend," said the butterfly,
"don't be surpriz'd,
"I once was the reptile you spurn'd
and despis'd;
"But now I can mount—in the sun-
beams I play,
"While you must for ever drudge on
in your way."

MORAL.

A wretch that to day is o'erloaded with
forrow,
May soar above those that oppress'd
him to-morrow.

An ODE.

STERN winter now, by spring re-
press'd,
Forbears the long-continued strife,
And nature, on her naked breast,
Delights to catch the gales of life.
Now, o'er the rural kingdom roves
Soft pleasure with her laughing train,

Love warbles in the vocal groves,
And vegetation paints the plain.
Unhappy! whom to beds of pain
A thralldom tyrannous consigns,
Whom smiling nature courts in vain,
Tho' rapture sings, and beauty
flows.

Yet, tho' my limbs disease invades,
Her wings imagination tries,
And bears me to the peaceful shades,
Where—'s humble turrets rise.

Here stop, my soul, thy rapid flight,
Nor from the pleasing groves depart,
Where first great nature charm'd my
sight, [heart.

Where wisdom first inform'd my
Here, let me, thro' the vales, pursue
A guide, a father, and a friend;
Once more great nature's work review,
Once more on wisdom's voice attend.

From false caresses, causeless strife,
Wild hope, vain fear, alike remov'd,
Here let me learn the use of life,
Then best enjoy'd, when most im-
prov'd.

Teach me, thou venerable how'r,
Cool meditation's quiet seat,
The gen'rous scorn of venal pow'r,
The silent grandeur of retreat.

When pride, by guilt, to greatness
climbs,

Or raging factions rush to war,
Here let me learn to shun the crimes
I can't prevent, and will not share.

But, lest I fall by subtler foes,
Bright wisdom teach me Curio's art,
The swelling passions to compose,
And quell the rebels of the heart.

The Author was ill of the Gout.

On SPRING.

From Miss Aldin's Poems.

NOW the glad earth her frozen zone
unbinds, [tern winds;
And o'er her bosom breathes the west-
Already now the snowdrop dares ap-
pear, [year;
The first pale blossom of th' unrisen'd
As Flora's breath by some transforming
power

Had changed an icicle into a flower,
Its name and hue the scentless plant
retains,

And winter lingers in its icy veins.
To these succeed the violet's dusky blue,
And each inferior flower of paler hue;
Till ripen months the perfect year dis-
close.

And Flora cries exulting, see my Rose



T H E

FARMER'S MAGAZINE.

A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]

American Husbandry.

PENNSYLVANIA. **T**HIS province together with New Jersey and New-York composed what was formerly called the New Netherlands, and was originally possessed by the Dutch and Swedes. After the country was taken by the English, Admiral Penn, who in conjunction with Venables had some years before taken the island of Jamaica, being greatly in favour with Charles II. obtained a promise of a grant of the tract of country now called Pennsylvania, from that monarch; but before he received his patent, death put an end to his life. His son, the celebrated founder and legislator of Pennsylvania, claimed the royal promise, and after a tedious court solicitation, obtained the patent in right of his father. Conscious that the only method of rendering the grant he had obtained from his Majesty valuable to himself, was to make both the country and its government as agreeable as possible to the settlers, he began with purchasing the soil, at a low rate indeed, from the Indians, as the original possessors; thus in the beginning he rendered all his future dealings with these people successful. Prepossessed with a favourable opinion of him, as to his designs, they were so far from giving any disturbance to the settlers, that they were ready to give them assistance whenever it was wanted. When he had thus wisely secured the Indians, he applied himself to execute the other part of his plan, that of peopling the country. This he found greatly facilita-

ted by the uneasiness of his brethren the quakers in England, who, by refusing to pay tithes and other church dues, suffered a kind of persecution from the clergy; their high opinion and regard for Penn, who was indeed an honour to their new church, made them the more ready to follow him over a wide and pathless ocean, to settle in a country then little better than a howling wilderness, and in a climate whose properties were unknown: Nor was he himself wanting in any thing that had the least tendency to encourage and support the resolution they had formed; he expended large sums of money in transporting and finding them in all necessaries; and not aiming at a sudden profit, that great men disposed of his lands at a very small purchase; twenty pounds for a thousand acres, and a shilling quit rent for every hundred, were the reasonable terms on which he bestowed estates. By pursuing such a generous plan, the colony of Pennsylvania was soon established, and has ever since been rapidly increasing. At this time land is granted at twelve pounds for every hundred acres, with a quit rent of four shillings reserved. Near Philadelphia land lets at twenty shillings the acre, and even at several miles distant from that city sells at twenty years purchase.

Pennsylvania is situated between 39 and 44 degrees of north latitude; it is about 300 miles long, and 240 broad; bounded on the north by the country of the Iroquois Indians; on the south by Maryland; on the east by the Delaware river, which separates it from New Jersey; and on the west by the Ohio. It is divided into the counties of Philadelphia, Chester, Bucks, Berks, Northampton, Lancaster, York, Cumberland, Newcastle, Kent, and Sussex.

The air of this province is very clear, sweet, and healthy; the winters are frequently severe, much more so than they are in England, yet are not of long duration, not lasting more than two or three months. The heat in summer is excessive and without intermission; so that melons become ripe in the open fields as early as July, and cherries by the latter end of May; September and October are the most agreeable months, for the preceding ones are too hot; this excessive heat of the summer is injurious to their grass lands and renders hay scarce; but as the cattle constantly lie abroad, this want is not so severely felt; however, if they were got more into the method of raising artificial grasses than they are, they might soil their cattle in the heat of summer, and produce a large quantity of manure which they now much want, as also procure an excellent winter feed in greater plenty, without considering

dering the turn it would give to their corn agriculture. Broad-clover, lucerne, saintfoin; all would do in their turns and varieties of soil.

The animals differ very little from New-England: the beautiful variety of birds found here by the first adventurers, are amazingly lessened from the increase of inhabitants and the cultivation of the lands, which, by destroying the woods, no longer afford protection for the feathered tribe. Among the most beautiful and most extraordinary may be reckoned the humming bird, in its size not much bigger than the humble bee; its plumage is most beautifully coloured, most of its feathers being green, some grey, and others forming a shining red ring round its neck; the tail glows with fine feathers changing from green to a beautiful orange. These birds visit Pennsylvania in spring when the weather begins to grow warm, and make their nests in summer; but towards autumn retreat to the more southern parts of America. They subsist barely upon the nectar or sweet juice of flowers, contained in that part called the nectarium, and which they suck with their long bills. As soon as they have sucked one flower, they fly to another; during the sucking they never settle on the flower, but flutter continually and move their wings with a quickness almost imperceptible, with a noise like the humming of bees, or like that which is occasioned by the turning of a little wheel. They make their nests of a brownish soft down, fine moss, hair, &c. about an inch in diameter at top, and half an inch deep; they lay two eggs of the size of a pea. They have among their animals flying squirrels, and a peculiar kind of squirrel which lives and burrows in the ground.

The trees they have in common with New-York, fruit-trees in greater abundance. Every countryman, even a common peasant, has an orchard near his house, in which all sorts of fruit, such as peaches, apples, cherries, &c. grow in plenty; the peaches are rare in Europe, but in Pennsylvania they have them in such plenty that they are even given to swine. They are sometimes kept for winter use; and for this purpose they are prepared in the following manner: The fruit is cut into four parts, the stone thrown away, and the fruit put upon a thread, on which they are exposed to the sunshine in the open air, till they are sufficiently dry; they are then put into a vessel for winter. But this manner of drying them is not very good, because the rain of this season very easily spoils and putrifies them, whilst they hang in the open air; for this reason a different method is followed by others, which is by far the most eligible.

eligible. The peaches are as before cut into four parts, are then either put upon a thread, or laid upon a board, and so hung up in the air when the sun shines. Being dried in some measure, or having lost their juice by this means, they are put into an oven, out of which the bread has but just been taken, and there left for a while, but as soon as taken out they are brought into the fresh air, and after that they are again put into the oven, and this is repeated several times till they are as dry as they ought to be; for if they are dried up at once in the oven, they would shrivel up too much, and lose part of their flavour. They are then put up and kept for the winter. In this manner apples are preserved in England.

The common privet is made use of in many places for hedges round cornfields and gardens, though the hawthorn makes a much better fence; the privet grows close and thick, but having no spines, the hogs and other animals easily break through, which they find more difficulty to do when set with prickly bushes.

They have a species of Sumach, called here the poison-tree; by making an incision into it, a whitish yellow juice with a nauseous smell comes out from between the bark and the wood. This tree is not known for its good qualities, but greatly so for the effect of its poison, which though it is noxious to some people, yet does not affect others, and therefore one person can handle the tree as he pleases, cut it, peel off its bark, rub it upon his hands, smell at it, spread the juice upon his skin, and make more experiments, with no inconvenience to himself; another person on the contrary, dares not meddle with the tree, while its wood is fresh, nor can he venture to touch a hand which has handled it, nor even expose himself to the smoke of a fire which is made with this wood, without soon feeling its bad effects, for the face, the hands, and frequently the whole body swell excessively, and are affected with a very acute pain; sometimes bladders or blisters arise in great plenty, and make the sick person look as if he was infected by a leprosy; in some people the external thin skin, or cuticle, comes off in a few days, as in the case when a person had scalded or burnt any part of his body; nay the nature of some persons will not even allow them to approach the place where the tree grows, or to expose themselves to the wind, when it carries the effluvia or exhalations of this tree with it, without letting them feel the inconvenience of the swelling. A person sometimes does not know that he has touched this poisonous plant, or that he has been near it, before his face and hands swell it by their swelling.

There

There is a plant here called the candleberry tree, growing plentifully on a wet soil, which thrives exceedingly well near the sea. The berries grow abundantly on the female shrub, and look as if flour had been strewed upon them; they are gathered late in autump, being ripe about that time, and are then thrown into a kettle or pot full of boiling water; by this means their fat melts out, floats at the top of the water, and may be skimmed off into a vessel: with the skimming they go on till there is no tallow left. The tallow, as soon as it is congealed, looks like common tallow or wax, but being of a dirty green colour, it is for that reason melted over again and refined, by which means it acquires a fine and pretty transparent green colour. This tallow is dearer than common tallow, but cheaper than wax.

The Indians plant great numbers of Squashes, a species of pompons or melons, and the Europeans have from them got the seeds; the fruit is common in the gardens, and is of an agreeable taste, when boiled and served up to table as turnips are in England.

They have several kinds of beans, and pease were indigenous before Europeans came there.

Wheat and rye are sown the latter end of September or beginning of October, and commonly reaped about June or July. Barley and oats are sown as with us, and ripen about the end of July. Buckwheat is sown about the end of July, and harvested about Michaelmas. If sown in May it produces flowers, but seldom good feed.

About Philadelphia and great part of the province, the soil is sandy; or light sandy loam; in some of the back parts, they have immense tracts of a black mould and rich loam.

The method of agriculture pursued by the first planters, we are told, was to sow the fresh land as long as it would bear, then leave it to itself to recover for two or three years, and then with all its weeds and foulness plough and sow again. But now they are got into a more decent method of tillage, but yet still sow corn too often; they raise wheat in great quantities, to which the culture of maize has greatly given place, barley, rye, oats, beans, pease, potatoes, &c. nor are they unacquainted with the turnip husbandry.

They sow their wheat about the latter end of September or the beginning of October; the quantity sown, a little more than two bushels to an acre, which with good management and culture on their good land, produce from twenty to thirty bushels, and on the inferior soils from fifteen to twenty-five bushels

bushels per acre.—Where the turnip husbandry is introduced, and the wheat succeeds clover, considerable crops are produced, and this by the most certain method of improving their land; neither is the horse-hoe unknown to them, which as well as the drill plough is common.

The wheat is ripe the latter end of June, and 'tis not at all uncommon after this harvest to sow buckwheat, and obtain a crop of that grain the same year; the most proper time for sowing that grain being in July.

They sow rye, as is usually done in England, on such land as will not so well do for wheat, or where the land is exhausted.

Barley is common, though not of so much consequence as in England, where it yields the universal drink, except of two or three counties; whereas in Pennsylvania cyder is the more general drink. Of barley they sow about four bushels to an acre in April, and generally mow it in July. Oats are managed in the same manner, but seldom produce great crops, owing to the want of proper tillage.

Several sorts of beans are raised here as well by the Indians as the English.

They had pease cultivated among the Indians before the Europeans went amongst them, but of late years a little insect destroys the pease so much as almost to prevent their cultivation; this little insect was formerly little known, but within these few years it is much increased; it deposits an egg into almost every pea; when the pease are ripe, their outward appearance does not discover the worm, which however is found within when cut. Here it lies till spring, during which it eats all the meal of the pea, and leaves only the outside case. This worm at length changes into a fly, which attacks other pease and produces other worms. When the inhabitants sow pease imported from abroad, they are the first year secure from these insects, but in the next they seize on the pea. Dr. Linnæus in his *Systema Naturæ* calls this insect *Branchus Pisi*, or the pea beetle, and says that the purple daw of Catesby is the greatest destroyer of them; and since this bird has been proscribed Pennsylvania, New-Jersey, &c. as a maize thief, a quantity of worms, which those birds destroyed, now do them more prejudice: Perhaps if the pease after threshing were steeped in a lye of lime-water with a small addition of arsenic, the aurelia of the insect would be destroyed, and a fresh ablution in clean water will take off the ill effects of the lye.

We will here venture to give a progression of crops, which would in general answer in Pennsylvania to the greatest advantage,

vantage, as we have been most undoubtedly informed by a gentleman who long resided on the spot.



Turnips, *Dung.*

Barley,

Clover, *Dung.*

Wheat,

Potatoes, *Dung.*

Maize or Oats,

Pease,

Wheat,

Turnips, *Dung.*

Barley, &c.

By this course of husbandry abundance of winter food would be procured of the best kind for their cattle, and cross crops might now and then be introduced to an advantage; such as buckwheat, winter and summer vetches, &c. By the above method of husbandry, the land with common care is kept clean, and every advantage of a summer fallow is produced without the loss. The avarice for corn too often destroys the whole, and it is reasonable enough to suppose, that the stated crops as here given will prove much more advantageous than corn every year, which tends to impoverish the land and fill it full of weeds.

In Pennsylvania they have great quantities of vines and mulberries, which we are apt to think might be turned to a very great account, nor shall we be surprised if in a few years we find Wine a staple commodity, and Silk, of their own production, an article of commerce.

They have here the Bermudian potatoes, which the common people and gentry plant in their gardens in the same manner as the common potatoe; they have a sweet, and agreeable taste, and almost dissolve in the mouth; they grow very well, but require great care to keep them from the frosts, nor must they be kept moist; the only way to preserve them is to lay them up in a box with sand in a dry warm room. They are now cultivated in England.

[To be continued.]

ART. II. *Of the durability of some Seeds.*

IT is manifest from a great number of experiments and discoveries, that divers species of seeds will endure many years buried in the ground, and yet neither rot nor perish, but rise

rise up again in their proper plants, when the ground by tillage is made a fit matrix for them. These seeds are generally of the smallest kind, particularly poppy, charlock, and mustard; for all kinds of corn-grain, beans, pease, and acorns will soon perish when buried; the reason of which seems to be, because these small seeds contain more oily and bitter juices, which preserve them from moisture; and in the next place, they consist of such small fibres, or vessels, that it is impossible, when they lie half a foot or a foot deep in the earth, for the power of the sun to rarify the juices into such fine particles as to penetrate those minute tubes, on which all vegetation depends. But when by tillage they have a light bed of earth, those seeds which are turned up near the surface, imbibe warmth enough from the sun to produce such a rarefaction as is above mentioned, and accordingly vegetate.

But the various kinds of grain, acorns, &c. having juices less oily or glutinous, and tubes more open, are easily penetrated by the heavy and gross juices which lie a foot deep in the earth; but not being able to protrude a root downward, nor a plant upward, by reason of the close pressure of the earth, from a plethora of juices, they naturally very soon corrupt.

Primrose seeds, which are exceeding small, being sown in fine mould, will come up in times proportioned to their depth, from one to seven years; the juices of those which lie deepest requiring the longest time to be rarefied.

Field poppies are very mucilaginous, and contain much oil; this seems to account for the great length of time they are supposed to have lain in the ground, where grass lands, after lying many years, have been ploughed up, and this plant has come up so plentifully.

In those places where they boil wormwood in their ship drink, and throw the seeds (after having boiled two hours) out on a dunghill, great quantities of that plant will in two or three years spring up, although there never were any before. Many other instances might be given of the lasting vitality of many kinds of small seeds, which led our less curious forefathers to adopt and assert the unphilosophical notion of the *equivocal* generation of plants. If you dig up the earth four feet deep, it will, without sowing, be fruitful of weeds the first year; if you go down five or six feet, it will be two years before many arise, except such as have winged light seeds like the thistle, dandelion, &c. which are carried to considerable distances by the wind.

This

This clearly evinces the necessity of extirpating weeds as much as possible before their seeds ripen and shed themselves; and particularly on dunghills, where they are generally plentiful and luxuriant: By omitting this the farmer multiplies his future labour exceedingly; for more seeds will be carried on lands from one unweeded dunghill than can be got out in seven years diligent labour.

A. B.

ART. III. On the advantages of using Harness for Oxen in Husbandry. In a letter from a Derbyshire Farmer.

Mr. SYLVAN,

NOTWITHSTANDING you have already favoured us with some very just observations on the great advantages arising from the use of oxen in husbandry, I take the liberty of sending you the following remarks on the same subject for your next number.

I live in the neighbourhood of a gentleman who has both sense to strike out, and spirit to pursue, new improvements; and to adopt every mode discovered by others, whose success has in any degree answered the expence. Notwithstanding the idle clamours of many ignorant people against the use of oxen in his ploughs and heavy carriages, he finds them in almost every respect superior to horses, and far less expensive.

He first worked them in yokes, but soon observed the inconveniences attending that Gothic mode.—It occurred to him that harness would be far preferable, and he hinted this to some of the neighbouring farmers, who, ever averse to deviate from the old beaten track, with one voice declared the impracticability of the scheme: But, not discouraged by clamours unsupported by any reason or just argument, this gentleman put his oxen all into harness, and found it a far less difficult and troublesome mode of working them than under yokes. They draw with much greater power, move faster, and are more handy and convenient. He executes all his ploughing and home carting with them, at much less expence than the same could be performed by horses, or even by the same oxen in yokes. A striking proof of this is his ploughing as much land in a day with three oxen as other farmers do with four or five horses:—A disproportion so amazingly great, that it decides the point at once, and in the clearest manner.

He feeds them in summer on grass alone, and in winter on straw, on which he works them moderately, but if hard, then they have hay or some turnips. The harness is much the

same as that for horses, excepting the collars opening to be buckled on; and also their being worn in the contrary manner to horses; that is, the narrow ends of the collars which open being downwards, and the chains being fastened to them in the same direction as in horse-harness; the beasts of course draw much higher than horses; this difference is necessary because of the different shape of horses and oxen. I saw a team drawing a heavy load of bricks, and observed that few if any horse-teams could out-walk them. The drivers assured me they worked much better than when yoked, drew a greater weight, and were more easily managed. One great benefit of this method, exclusive of the increased power, is, the placing them in a single line instead of a double one, which in some sorts of ploughing is extremely useful: Indeed, in general, the nearer the team is to the weight, the greater its power; but this is not the case with oxen yoked, owing merely to that awkward untoward way of drawing; for it is well known to all ox-drivers, that the beasts cannot exert their full force, from the inequality between the couples, as it is common for one beast to make its fellow draw all; an inconvenience totally removed by this method of working them in harness.

A CONSTANT READER.

[We have to observe on the above letter, that where oxen are used they must undoubtedly tend more to profit than horses, for the obvious reasons before noted in the Magazine for April, p. 97: that they will draw in harness better than yoked is no new observation, but has in several private hands been some years practised on a principle of dividing the draught and weight more equally to all parts of the beast, as consequently their strength is more exerted; not that drawing at length can be more advantageous than drawing double, either as to power or equality, but oxen may be placed double in harness as well as horses. Another observation we wish to make is, the mistaken notion that oxen can work on straw only; they err greatly who think so; the better oxen are kept in a moderate degree, the cheaper in the end will they prove, by doing more work and being freer from diseases. Oxen work more hours than horses, and afterwards want less care, but a provision should be made of rack and manger, and clean litter, under a covered roof to defend themselves and food from the falling rains &c. A little corn should also be given them with their straw and turnips, for however turnips may be advantageous to still cattle and milch cows, they are not substantial enough for the labouring ox, and if given alone will too often bring on diseases, lowfiness, cholics, fluxes, &c. which a little corn would prevent.

We

We cannot agree in our opinion that three oxen will do the work of four or five horses in a day, being experimentally convinced to the contrary; they have each their excellencies, and both should be taken care of, as well by the master as the servant.

When oxen are harnessed they do not tread into the ground so deep, but pull more level along.]

ART. IV. *On the Disease called the Glanders in Horses, with a method of Cure recommended.*

THE Glanders in horses is a distemper which generally proves fatal. At first, when it is only an ozena, or ulcer of the internal membrane of the nose, it is easily cured; but when of long continuance, it is very dangerous and contagious.

All horses that are said to die of the glanders, are in fact destroyed by a pulmonary consumption, the lungs being destroyed. I have cured many, in the first stage of this malady, by the following method:

Take a bundle of green ash twigs about an inch diameter; burn them to a flaming coal on a clean hearth, then quench them in a gallon of beer, so as to make a strong lye. Raise the horse's head, and with a drenching horn pour three spoonfuls of it down each nostril twice a day till he is well.

In the second stage, when the lungs are contaminated, I cannot pronounce this remedy effectual; in this case, however, I have known the following often to succeed:

Mix powder of myrrh, ginger, and sulphur together in a warm mesh of bran; place this mesh in a little tub under the horse's nose without letting him eat it. Cover his head over with a blanket or rug so that all the air he breathes may be strongly impregnated with the ingredients. When the mesh is grown cool enough, put it into a horse-hair or close bag, like those the hackney coachmen use for feeding their horses on their stands in London; draw the bag over the horse's nose, and tie it over his head.

By the time it is cold, have another ready to apply hot in the same manner, and repeat the process six or eight times the first day. This will draw a large quantity of mucus (or slime) from the nose of the beast, and greatly relieve him. Renew the application every third day, and it will generally prove effectual.

I am, Sir, your constant reader,

Norwich, July 3.

A NORFOLK FARRIER.

ART. V. *On the cause of the Rot in Sheep.*

AS your Magazine is evidently designed to convey the most useful and general information to the farmer, I wish to contribute my mite towards it; and therefore send you a few observations on the cause of the rot in sheep. What I offer to you on the subject, are the sentiments of one of the best and most accurate farmers in this kingdom; being the result of long observation, and founded on experiment. He is very clear, from long attention, that the rot in sheep is not owing to lands naturally low and wet, (as has been generally imagined) but solely to floods. He thinks that the young grass which rises in consequence of a flood, is of so flashy a nature, that it occasions this complaint. But whether right or not, in the latter idea, still he is clear as to the fact, that floods, in whatever manner they act, are the real cause.

He has frequently practised the most curious experiment perhaps ever made on the rot in sheep; when particular parcels of his best bred sheep are past service he fats them for the butcher; and in order to be certain that they shall be killed, and not go into other hands, he rots them before he sells, which from long experience he can do at pleasure.

It is only to flow a pasture or meadow in summer, and it inevitably rots the sheep that feed on it the succeeding autumn. After the middle of May, water flowing over land will certainly have this effect, whatever be the soil: he has acted thus with several of his fields, which without that management would never affect a sheep in the least: The water may flow all winter, and even to the end of April, but if after that time, the above effect is sure to take place. Neither the grass which rises in wet springy land, nor the ground being very wet from heavy rains, will have this effect, unless the water flows; but, on the contrary, wherever the driest land has been flowed in the summer months, this effect has always followed.

WILLIAM JOHNSON.

[We should be very glad to insert any thing that may tend to elucidate this intricate subject. Floods have ever been supposed to occasion the disorder, but how or in what manner we know not: what are we to say, when drovers will tell us, that certain spots will rot sheep as they feed in their passage from Weyhill fair to their place of destination, and that others on the same commons will not, even in the same degree of lowness: Nor does the observation of our correspondent prove that it is not the peculiarity of the soil, perhaps some particular weed or plant which is then produced. Certainly sheep on Wiltshire downs, about Amesbury, are not subject to the disorder, as we are informed on our enquiries.]

ART. VI.

ART. VI. *A Curious Account of Bees. In a letter from Dr. Simmons to Dr. Duncan.*

[From the MEDICAL COMMENTARIES, a Work lately published by a Society of Physicians at Edinburgh.]

IN my way to the German Spa last year, I visited the prior of the English dominican convent at Louvain, who is famous for his skill in the management of bees. This ingenious friar, who is every day making some curious experiments on this subject, has discovered, that the pure honey we have been used to procure from Narbonne, Spain, and Minorca, is to be met with in every country. It is frequently collected by the bees after gentle showers, and when the hops (of which there are considerable plantations in the Austrian Netherlands) are covered with honey-dew, he never fails to find it in the hive, and then he cuts out the part of the comb in which it is deposited. The bad effects of the honey dew are well known to my countrymen, the hop-planters in Kent. The good Dominican goes so far as to suppose that these bad effects would be prevented in some degree, were the farmers and labouring people to be more solicitous about the preservation and increase of bees. They are so much attended to in the low countries, that a certain farmer near Louvain sells a thousand stocks every year, at nine escalins each (about five shillings English). The prior, who has a great number of hives in his garden, asserts, that he gets three times as much honey as is usually procured by common management, as he is able to make his bees work when he pleases, and at any time of the year. When a colony is become too populous, he distributes the bees into different hives, and now and then he finds it necessary to collect the bees of the several hives into one. He had been unsuccessful, however, the day before I visited him, in one of his experiments; for having deprived a hive of its queen, the whole colony had migrated to another hive, and a battle had ensued, in which all the emigrants had been killed. I was not without my fears when I approached so great a number of hives; but the prior assured me I should be in safety, if I could carefully keep my mouth shut, and breathe very gently through my nostrils only. In this, he said, consisted the whole secret of approaching them, and in this way he turns up his hives with great unconcern, and even cuts out part of the comb while the bees are at work. This is a curious fact; nor is it wonderful, that the breath should be disagreeable to the delicate organs of these insects.

ART. VII.

ART. VII. *On the Cultivation of Potatoes on the sandy soil near Doncaster.*

EXPERIMENT I.

IN 1767, Anthony Wharton, Esq; of Carr-House, planted two acres of the best sandy soil with potatoes, after a third crop of corn, in rows equally distant, two feet asunder. The ground was manured for them with twelve loads of rotten dung per acre, a forkfull at each hole. The produce was 242 bushels per acre, which at the price of three-pence a peck amounted to twelve pounds per acre. After them cabbages were planted, and the crop proved very fine.

EXP. II. In 1768, two acres more of potatoes were planted, the management and produce were exactly the same as before.

EXP. III. In 1769, four acres and a half were planted on the same soil, and managed in the same manner. The produce 300 bushels per acre, or 15l.

EXP. IV. In 1770, he had several pieces in various distances, from two feet six inches to three feet six inches. I found them all as clean as a garden, and as fine luxuriant a growth as I remember to have seen; they yielded from 15l. to 25l. per acre.

All these crops Mr. Wharton has applied chiefly to the feeding of swine, which he fattens with them. He generally boils them, and sometimes mixes them with barley meal; half a peck of which he puts to six bushels of potatoes.

The pork is perfectly good; being fat and firm as any other. He also finds potatoes of great use in half fattening bacon hogs, to prepare them for pease and beans. In these applications the value of the potatoes is four-pence a peck, whereas only three-pence is reckoned in the above calculation as a market price.

Mr. Wharton's method of cultivating potatoes is as follows: The land is ploughed three or four times; then holes are made by a line with a spade; dung is put in these holes, and the potatoes are set in the dung. The first tillage is to harrow the land flat as soon as the weeds spring, and before the potatoes come up—they are afterwards earthed up with hand-hoes several times, and cleared of weeds. One circumstance in which Mr. Wharton is peculiar, is, his planting only the eyes or knots cut off large potatoes, the heart or body of the potatoe being all preserved for use.—This method answers quite as well as planting the whole root when cut in pieces, and

and is a very great saving. The average produce amounts to 20l. per acre at four-pence the peck, and the expences of the crop are as follows:

	L.	S.	D.
Rent and Town charges of an acre,	2	10	0
Ten bushels of potatoes for planting,	0	13	4
Twelve loads of manure, (on to the land) at 6s.	3	12	0
Planting and slicing,	0	10	0
Three ploughings,	0	10	6
One harrowing,	0	1	0
Three horse-hoeings,	0	5	0
Three hand-hoeings and weeding,	0	7	0
Taking up and carrying home,	1	1	0

Total of Expences £. 9 9 10

Which deducted from 20l. the annual produce, leaves a nett profit of ten pounds ten shillings and two-pence per acre to the planter. This shews how much this valuable root deserves attention on rich sands, and the light arable of a farm, where they will always produce admirable crops.

A YORKSHIRE FARMER.

[Mr. Wharton's method of planting eyes only is not peculiar to himself, and we think not so good as planting whole or half potatoes in a hole as the encrease from the several eyes will more than pay for the supposed extra waste of the potatoes so used—and single eyes often fail, rotted by frost rain, &c. or destroyed by drought. We wish to refer our readers back to page 66 in the March Magazine of this year.]

ART. VIII. *On the Culture of Carrots.*

Mr. SYLVAN,

IN answer to your enquiry respecting the cultivation of carrots on rich sandy lands, I think I cannot communicate any thing more interesting than the following letter sent to the Society of Agriculture for the county of Nottingham and West Riding of Yorkshire, in the year 1770, by a gentleman farmer of great experience near Doncaster. It is full and explicit on that head, and will, I doubt not, afford your readers much satisfaction.

I am, Sir, your sincere well-wisher,
West Riding, Yorkshire.

W. SHACKLE.

To the SOCIETY of AGRICULTURE, &c.

GENTLEMEN,

In consequence of your offer of a premium for the greatest quantity of carrots per acre on any quantity of land not less than

than two acres, I was desirous of becoming a candidate; and, ambitious of being a successful one, spared no pains or expence to obtain this honourable prize.

I had a field of two acres which was in swarth, and had not been ploughed within memory: The soil a sandy loam, but most inclining to sand, and remarkably full of twitch grass; but having fixed on this land for my carrots, I took the following method of managing it.

It was in the occupation of a tenant, and I could not come into possession of it till the 19th of February, 1769, when I had it pared; but, the season not permitting the burning of the sods, I carried them all off the ground. I then ploughed it for the first time, with the trenching plough, twelve inches deep, and made it as clear by harrows as I possibly could from twitch grass. The second ploughing was sixteen inches deep; the third of the same depth; and the fourth time with a common plough.

I then sowed half the field with seeds in drills, at one foot distance; the other half broadcast, and the latter, when come up I hoed into drills of the same distance, and thinned the carrots in the drills to eight inches distance from each other.

The twitch grass, by these different ploughings, was cut into small pieces, and so intermixed with the soil, that it came up in such quantities as almost to choak the carrots. This occasioned a very extraordinary expence in weeding.

The ploughing too deep brought up the sand, which impoverished the upper soil, and was the occasion of the carrots not being so good as might otherwise have been expected.

The crop was got in in November; and ten ton and a half being cleaned, and laid up in a stable, by first laying sand, and then carrots, and so on till the whole was laid up, the quantity of sand and carrots together heated, and the carrots were burnt to a cinder before we perceived it; so that I was a considerable loser by the crop.

The observations that occur to me from the above experiment are,—First. That the land to be sown with carrots should be a dead fallow.

Secondly, That it should not be ploughed deeper than the good soil reaches.

Thirdly, That the crop, when gathered, should be well dried before they are laid up by themselves, without sand or any thing else: And I am of opinion, that the best method is, not to lay them up at all, but to draw them as they are wanted. I am also of opinion that sowing them broadcast, and hoeing them

them as they do turnips, is better than sowing them in drills; for in broadcast they cover the ground, and retain the moisture better than in drills.

I am, Gentlemen, your very humble Servant,
J. S.

[Carrots are adapted to a loose sandy soil, and if the ground be clean or trench ploughed, or rather dug, will generally pay well, but they require great care in weeding, and never can succeed where this is omitted. Objections to their remaining in the ground are, 1st, The loss of the land, as carrots will make a good wheat season; and, 2dly, The frosts, which would destroy them.]

ART. XIII. On the Improvements in Agriculture in Norfolk.

Mr. SYLVAN,

PERHAPS the following extract from Mr. Arthur Young's Tour through Norfolk, describing the amazing improvements made by the farmers in that county, may afford instruction as well as entertainment to your numerous Readers. Your insertion of it will therefore serve them as well as oblige your friend.

Having described the magnificent seat of the late Earl of Leicester at Holkam, our author thus proceeds:

"All the country from Holkam to Houghton was a wild sheep-walk before the spirit of improvement seized the inhabitants; and this glorious spirit (manifested in this county more than any other perhaps in Europe) has wrought amazing effects. Instead of barren wilds, and uncultivated wastes, inhabited by scarce any thing but sheep, that country is now all cut into inclosures, cultivated in a most husbandlike manner, richly manured, well peopled, and yields an hundred times the produce that it did in its former state. What has wrought these vast improvements is the marling; for under the whole country run veins of a very rich soapy marl, which they dig up and spread on the old sheep-walks; and then by means of inclosing throw their farms into a regular course of crops, and gain immensely by the improvement.

The farms are mostly large, and the rents low, for the farmers having been at a great expence in improvements, they could not afford to lay out their money without long leases; so that most of the farms are now let considerably under their value.

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* A wonderful increase indeed!

Add to this, that the greatest part of the country belongs to landlords, who have a vanity in not raising their tenants rents, and others are supposed to have taken moderate fines. From these advantages the farmers have raised large fortunes, and bid fair to become possessors of the whole country.*

The farms run from 300 to 900l. a year,† for which sums they have a great quantity of land. It is very difficult to discover the rents among such large farmers, who all make a great secret of it; but I have very good reason for believing that they are in general from 2s. 6d. to 6s. per acre. Many farms under a modern let are rented at 10s. and upwards per acre, but they are not very common.

The principal farms are those of Mr. Curtis of Sommersfield, 2500 acres; Mr. Mallett's, of Dunton, as much; Mr. Car's, of Massingham; Mr. Barton's, of Rougham, 3000; Mr. Glover's, of Creek and Barwick, and Mr. Savary's, of Syderstone, each 1100 acres. Cultivation in all its branches is carried on by these men and many others in the most complete manner; but marling is the great foundation of their wealth. They lay about 100 loads on an acre, which cost them for digging from 25 to 30s. and they reckon the expenses of the teams and other labour to be as much more. The improvement lasts in great vigour above twenty years. Their course of crops is, marle, and break up for wheat; second, turnips; third, barley; fourth, laid down with clover and ray-grass, for two or mostly three years. They dung or fold for all their winter corn, and reckon two nights fold equal to a dunging; the quantity of the latter they lay on an acre is twelve loads. For some years after the marling they reap on a medium four quarters of wheat per acre, and five of barley—and fifteen years after marling, three of wheat and four and a half of soft corn. The general economy of their farms will appear from the following sketch of one of 1100 acres, viz. 100 acres of winter corn, 250 of barley and oats, 50 pease, 200 turnips, 400 grasses, 100 sheep-walk. For the management of all this land, the farmer keeps six servants, six labourers, thirty horses, twenty cows, 900 sheep, five ploughs; and in harvest time has about forty people in the field.

ART. X.

It is no uncommon thing to see, on a Saturday, many Norfolk farmers come to Norwich market, in their coaches, or post-chariots and four, with two or three powdered footmen in livery!

† Some to 1000l., 1200l., and even 1400l. a year.

ART. X. *On the Advantage of cultivating Cabbages.*

Mr. SYLVAN,

SIR,

Northumberland, June 1, 1777.

HAVING frequently perused your spirited and improving Magazine upon a variety of important subjects relative to agriculture; and not yet seen any extract of a journal or directory relating to the Culture of Cabbages, I presume to offer an extract of one of my own, and if adapted to your system of process, you may insert it in the Farmer's Magazine.

Yours, &c.

F—t—n.

J. C. H.

Upon land adapted for cabbages, I think it is requisite to pursue the turnip system; only in ploughing the manure in, always throw the land on to the ridge, and set the plants in a single row on the top of each: so the dung is covered up in the ridges, and the plants in a proper situation for profiting by it to the utmost. As to the distance of the rows, you must be guided absolutely by the richness of the soil: if you find the plants join from row to row, when at four feet, then you have proof, that they should not be planted nearer; but, if they no more than join, with three feet rows, then you would lose in the crop, if you gave a greater distance; two feet, from plant to plant, is the common mean distance.

When the manure is spread and turned in, the proper way of planting will be to send women or children in with bundles of plants, to drop them on the tops of the ridges, at about two feet distance: They will lay ready for the men, who may then plant almost as fast as they can walk; but, if they have to get, carry, and set the plants, they will not be able to do near the work they might with better contrivance. The rows at four feet may be planted at five shillings an acre. It is a rule among the cabbage planters in husbandry, never to water the plants, let the season be as dry as it may, insisting that it is entirely useless. Upon this I shall venture to remark, that in most years, if the land is in fine tilth, and well dunged, this may be right, as the expence must be considerable; but I should apprehend that in very dry seasons, when the new set plants have nothing but a burning sun on them, that watering would save vast numbers, and might very well answer the expence, if a pond is near, and the work done with a water-cart.

There is one use in cabbages, which appears not to have met with the attention it merits; it is the planting on those lands

lands where turnips have failed. A late sown crop of those roots scarcely ever comes to any profitable amount; but cabbages planted on the land, without any fresh ploughing, would turn out a very beneficial crop for sheep late in the spring; in all probability (unless on very light, sandy, or limestone soils) of greater value than the turnips, had they succeeded. No farmer can entertain too high sentiments of the necessity of gaining crops of green winter food; the importance of having such food for cattle, and not depending totally on hay, is one of the clearest axioms in the whole system of husbandry. His profits will be amazingly lessened, his loss for the want of manure felt severely for many years, and on farms not abounding with hay, his expence in buying it, or his loss in selling his cattle will be equally great. But besides these accumulated evils, there is another of a different nature, which he should consider well: it is the change of his course of crops. After either turnips or cabbages, he sows spring corn, and with that spring corn, clover. On some soils the grass is left but one year, in others two, and in others mixed with rye-grass, three, four or five. The lay is ploughed up, and wheat at once harrowed in. This is at once compendious, cheap, and yet most excellent husbandry; for the whole duration of the grass is a constant fund of profit, at scarce any expence, and the preparation for wheat is carrying on all the time in the most beneficial manner. But, if the turnips fail, and no cabbages are planted, what is the consequence? Why, the farmer sows wheat on the fallow, in hopes of a good crop, to pay him for so much tillage as the land has received. This introduction of that grain at once breaks the whole arrangement of his farm, and he is either forced to begin again, or to pursue that pernicious husbandry of sowing two crops of white corn running. He must either fallow for turnips again, or take a crop of barley, and then turnips; thus is he thrown out of his clover, though as important a crop as any on his farm, and launches into a series of tillage, that cannot but prove very expensive to him, without repaying half the benefit that the clover course would have done. For these reasons, when the turnips fail, and cabbages are not planted, the land should be laid up in winter for barley, and clover sown with it, which will turn out far more profitable than throwing in wheat.

[We are much obliged to our correspondent; his rules and observations are unexceptionably just, and deserve the greatest attention. We would as much as possible discourage the sowing of successive crops of white corn, as injurious to the land, and contrary to the
Farmer's

Farmer's real interest. We will thank him for his future favours, and should be glad of his real address, as we possibly may want to ask him a few questions: his name shall be kept secret if desired.]

ART. XI. *On the Scarcity of Timber in this Kingdom.*

To the EDITOR of the FARMER'S MAGAZINE.

SIR,

North Riding, Yorkshire.

I Never reflect upon the impending scarcity of timber in this kingdom but with heartfelt regret; considering that authors of sense and undoubted veracity assert, that there is not at present timber in England sufficient to serve for national uses, as ship-building, &c. above half a century; notwithstanding which we see all the capital woods cut down, and scarce a tree (in many places) planted for the use of posterity. How alarming this circumstance must appear to a reflecting mind, when it is considered how many dependencies there are upon the oak, and even upon the inferior sorts of timber, as ash, elm, &c. Surely the cultivation of this important object will not only appear advantageous, but meritorious, when we consider that the English oak is the best in the known world for the great purposes of ship-building and country uses. And is not our navy the pride, the envy of the world, and the great bulwark of Britain? What would its guards and garrisons avail, had we not the men of war to protect our harbours and our commerce, not only in Britain, but in the most distant climes? and are not our merchant ships the very hinges of the trade and commerce of this great, this flourishing, and wide-extended empire! Besides these, there are many other important objects dependent on the oak.

I know a great many farms let from 300 to 400l. per ann. without so much wood growing upon them as would respectively serve them for gates; and it is a known fact, that there are few farms of 30 or 40l. per ann. but have some waste corner, some unfertile spot, more fit for this than any other purpose. And further, where have we a river, but in many places for miles its sides are overgrown with thorns, briars, and all kinds of rubbish, whilst the true sons of the forest seem to be in a great measure annihilated. — Would it not then be of infinite advantage to the community, if gentlemen would (if no other mode can do it) retrench some of their superfluous expences, which it is not my business here to particularize, and devote a little of their money to the planting those (at present)

present) unprofitable wastes. The benefit that would result from a scheme of this sort reduced to practice, would exceed belief. Numbers of poor people would be kept at work in winter (the most dreary time of the year) in planting, pruning, &c. and that violation of the laws, which extreme indigence often excites, would be in a great measure happily prevented. Hence the poor rates, which are now most enormously high, would be considerably reduced, and the laudable work of the present age imitated and celebrated by succeeding generations. If the present animosities should unfortunately tend to sever the colonies from their just dependence on their mother country, to what an alarming state should we be reduced! A great part of our naval stores having hitherto been imported from thence. And who can foresee what the efforts of a strong and crafty people will produce, built as I fear they are on the strong basis of republican freedom, and unnatural enmity to the parent state? Whenever I am informed that a wood is felled, and the proprietor is planting in return, it gives me an innate pleasure; but generally when I become a spectator thereof, to my mortification I find only a few Dutch elms, sycamores, or a few shrubs, merely unserviceable, and planted more for ornament than for use.* If a gentleman is asked why he is making such havock in his estate, by selling his woods and planting none in their stead, the answer is as common as the pernicious practice! "Why (says he) should I be at the trouble and expence of planting, as it will never come to perfection in my time."† A man who has children

* Mr. Evelyn, in his preface to the *Sylva*, after due reproofs of the impolitic waste and universal sloth among us, says, "We should now turn our indignation into prayers, and address ourselves to our better-natured countrymen, that such woods, as do yet remain entire, might be carefully preserved, and such as are destroyed, sedulously repaired. It is what all persons who are owners of land may contribute to, and with infinite delight as well as profit, who are touched with that laudable ambition of imitating their illustrious ancestors, and of worthily serving their generation; to these my earnest and humble advice should be, that at their first coming to their estate, and as soon as they get children, they would seriously think of the work of propagation also: For I observe there is no part of husbandry which men more commonly fail in, neglect, and have cause to repent of, than that they did not begin planting betimes, without which they can expect neither fruit, ornament, or delight from their labours. Men seldom plant trees till they begin to be wise, that is, till they grow old, and find by experience the prudence and necessity of it."

† How much more noble was the expression which Mr. Evelyn records of Ulysses's father. "When Ulysses, after a ten-year's absence, was returned from Troy, and, coming home, found his aged father in the

children may with as much propriety say, why should I care and toil, but sleep and take my pleasure, as the competency I am possessed of will maintain me as long as I live. This makes me naturally allude to the Romans, and I cannot refrain giving you two or three stanzas upon the occasion:

Oh! think of Rome's declension and its cause,
Who to the universe dictated laws:—
Whose armies where they went destruction hurl'd,
And truly conquer'd all the western world.
Till wealth superfluous brought fell luxury in,
Thence came corruption, that accursed sin;
Thence that abundance, which in war we find
Their arms ineebled, and deprav'd their mind;
Indolence sprung, and soon they hated toil,
Nor thought of war, nor till'd the fertile soil.
Hence Rome decay'd, and e'en its slaves acquir'd
That fame and glory, by the world admir'd.

I could enlarge upon this, but shall only say, that such absurdities carry with them the strongest marks of an unmanly feeling, a weak understanding, and a vitiated taste.

If an estate were to be bought with fine plantations of oak upon it, and the land on which they grew fit for no other purpose, would they be accounted lumber on the purchase? surely not; on the contrary, they would greatly enhance the value of it. And now let me observe, that instead of the very common method of making hedges with stakes, &c. I would advise them to be more generally made in the pricked or brushy way, as a method to preserve what timber we have left, as the cutting of stakes often spoils the young and thriving part of it. I am sensible from the situation of this island, its rapid increase of population, its fertility, and immense internal resources for procuring materials for manufacturing, and from the industry, ingenuity, and natural bravery of its inhabitants, that it might flourish to the end of time, and repel the combined force of all the maritime powers in Europe, if it only abounded with timber so far as upon any emergency fully to supply our naval power. Whereas should the colonies (as I said before) maintain their wild plea of independency, and prevent

the field planting of trees, he asked him, "Why, being so far advanced in years, he would put himself to the fatigue and labour of planting that, of which he was never likely to enjoy the fruits?" The good old man, taking him for a stranger, gently replied: "I plant, says he, against my son Ulysses comes home." The application is obvious, and instructive for both old and young."

prevent our wonted supply of naval stores, or should the powers up the Baltic, from envy, disgust, or self-love, prohibit the sale of timber, &c. to us, and we thereby be forced to a reliance upon our own in such a reduced state as it now is in; the inevitable consequence would be, that many necessities of life would be enhanced, and from the absolute necessity of high freights, other nations would undersell us in foreign markets, and gain our shipping trade; we should lose the dominion of the sea, and either fall a prey to, or be insulted even by our own colonists.

A number of gentlemen, whom I have urged to plant timber upon their estates, frivolously object that their waste grounds will not grow any in perfection. I believe I may nearly speak of this as Pope does of Virtue:

"Where grows, where grows it not, if vain our toil,

"We ought to blame the culture, not the soil."

For I confess I scarcely know any land, excepting the most sterile moors and some places by the sea side, but what will grow timber of some sort, and admitting it is only an inferior sort, yet the benefit would be great; since even the willow is of extensive use in husbandry, being almost equal to fir for fencing of turnips, making cart bottoms, &c. Whether this shameful neglect of the moderns, in regard to planting timber, proceeds from a fixed resolution not to pay any respect to, or adopt the ideas of their brave and virtuous forefathers, which they account barbarous, or whether from a mere thoughtlessness and disregard to posterity, I shall not determine; but this I must say, that had not our ancestors been more zealous of our welfare than we are ourselves, not only in regard to planting timber, but in bravely repelling the insults of their enemies, and in virtuously defending their laws and liberties, which they sealed with their blood; I should greatly question whether their degenerate sons had ever acquired so wide an extended empire; or whether ere this we had not been sunk into the most servile and abject slavery.

RUSTICUS.

I [We lament with Rusticus the decrease of timber throughout the kingdom, and are equally well convinced of the great utility of planting; but Rusticus will excuse us, if we dissent from him in one or two particulars. Notwithstanding the great depredations that have been made on our forests, we cannot admit that there is not at present timber in England sufficient for national uses, as ship building, &c. above half a century; or that "all the capital woods are cut down, &c." On the contrary, we have good reason

to believe that our national consumption during a whole century would not reduce us to this low ebb, even supposing no new plantations to be made. We beg leave also to observe, that as self-interest is the most ruling spring of action, we conceive that a clear display of the real advantage that would accrue to individuals themselves from planting on their estates, would be a far more forcible argument than that of recommending their contributing to the good of the public, or the benefit of posterity.

ART. XII. On the Utility of publishing Improvements in Agriculture.

MR. SYLVAN,

I Am lately become a purchaser of your Magazine. I like your plan, but think it still might be much improved. By means of such an easy communication, farmers in distant counties have an opportunity of informing each other of their different methods of managing their ground, and improvements might travel quicker; in short, I quite acquiesce with your correspondent *See Task*, who, in your magazine for March, advises you to request of your correspondents an account of the common method of farming, as practised by a whole parish together in any part of England; and to induce him to perform his promise of sending such an account, I hereby promise to second it with an account of the method practised in the village where I live, in which I shall attend to the queries he very properly proposes.

H—H; Norfolk

ARCUS.

A Receipt for a Horse or Cow that is very restless in body.

Take a barber's wash-ball, cut it in several pieces, and give it the beast in a pint of best beer or milk.

For a Horse that has got the Cholic.

Give him a small quantity of gin mixed with old beer, down his throat in a horn: It is a certain cure.

[We shall be much obliged to Arcus for what he promises, and we cannot give too full an account of the Norfolk husbandry; he will be kind enough to send us his address, that we may be able to send him a letter.

We earnestly hint that our Correspondents will not send any receipts which are not warranted by experience.]

ART. XIII. *Explanation of the Plate of the Three-Shared Plough, &c.*

To the EDITOR of the FARMER'S MAGAZINE.

SIR,

Preston, May 9, 1777.

I Have sent you a plan of a plough with three shares, which I invented myself for sowing turneps, and stirring ground, when in tilth, which has been twice ploughed and then harrowed. I have tried it with success for four years, to prove the use of it, before I recommended it to the publick; in which time I have sowed many acres of turneps with it, and have lent it in my neighbourhood. It is particularly useful, when turneps have missed, to run the ground over, as it ploughs three acres a day; I have also found it of great service after harvest to run over the fallows with, before the last time of ploughing for wheat, as it cuts up thistles and every weed which comes in its way, sparing none. I sent this three-shared plough last week to the Society of Arts and Sciences in the Adelphi buildings in the Strand. I have used it myself three years, and a neighbouring farmer had one made by mine last year.

Fig. 7, is a contrivance of mine out of an old scythe for a boy to cut thistles with, as faster than a real scythe; my shepherd uses the same to cut thistles after his flock. I sent one at the same time to the Society of Arts, &c.

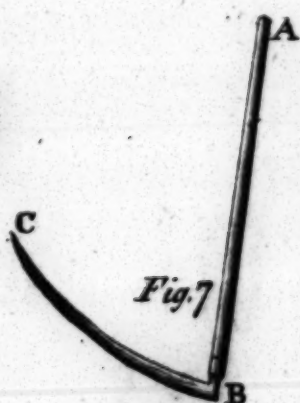
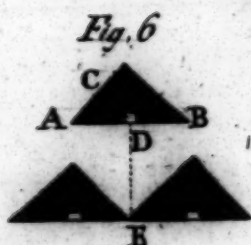
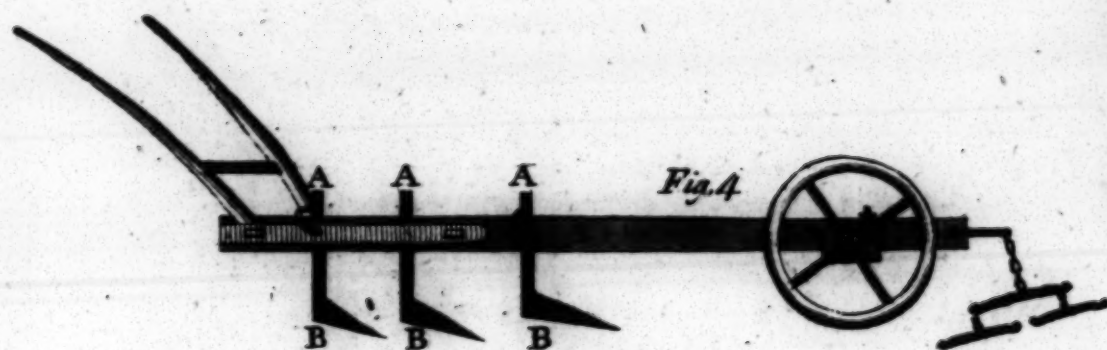
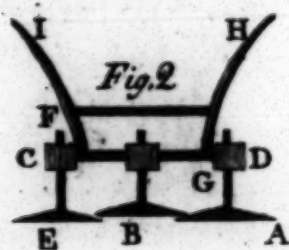
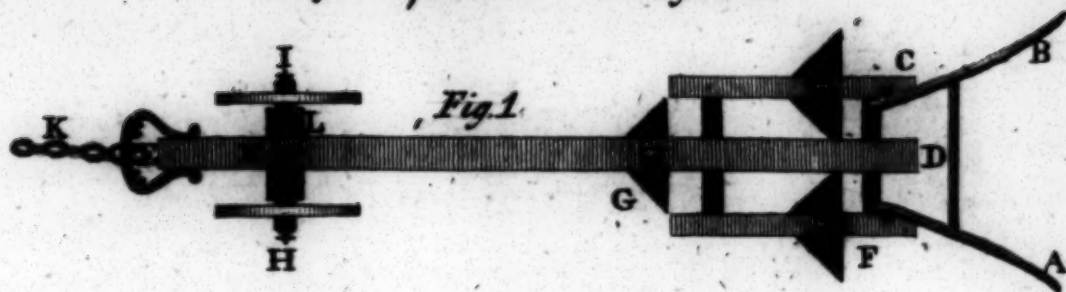
Dimensions of the Three-Shared Plough.

	Feet	Inches		Feet	Inches
Fig. 1. from A to B	2	3	Breadth of K	0	10
From B to C	4	9	The bolster L's length	1	4
From D to E	7	2	The bolster's breadth	0	4½
Beam's breadth at top	0	3½	The bolster's thickness	0	5½
Its thickness on the side	0	4	The beam is let into the		
From C to F	1	10	bolster	9	2
From F to G	2	5	An iron bolt, in an angular		
From H to I	2	8½	form, goes through the beam		
at M, underneath the bolster, and comes up through the					
beam, where it is fastened at top by a key and ferril to hold					
the bolster securely to the beam, because the spindle pin, which					
holds the wheels on, goes quite through the middle of the					
bolster, and therefore prevents the pin from going that way,					
which is the reason of its being placed on the outside; the					
wheels are both the same diameter, viz. one foot eight inches.					

	Feet	Inch.		Feet	Inch.
Fig. 2. from A to B	1	6	From G to H	4	9
From C to D	1	10	From H to I	2	3
From E to F	1	10			

Fig.

Engravid for the Farmers Magazine.



*Capt. HINDE's New-invented three-Shard Plough.
at Preston, near Hitchin in Hertfordshire.*

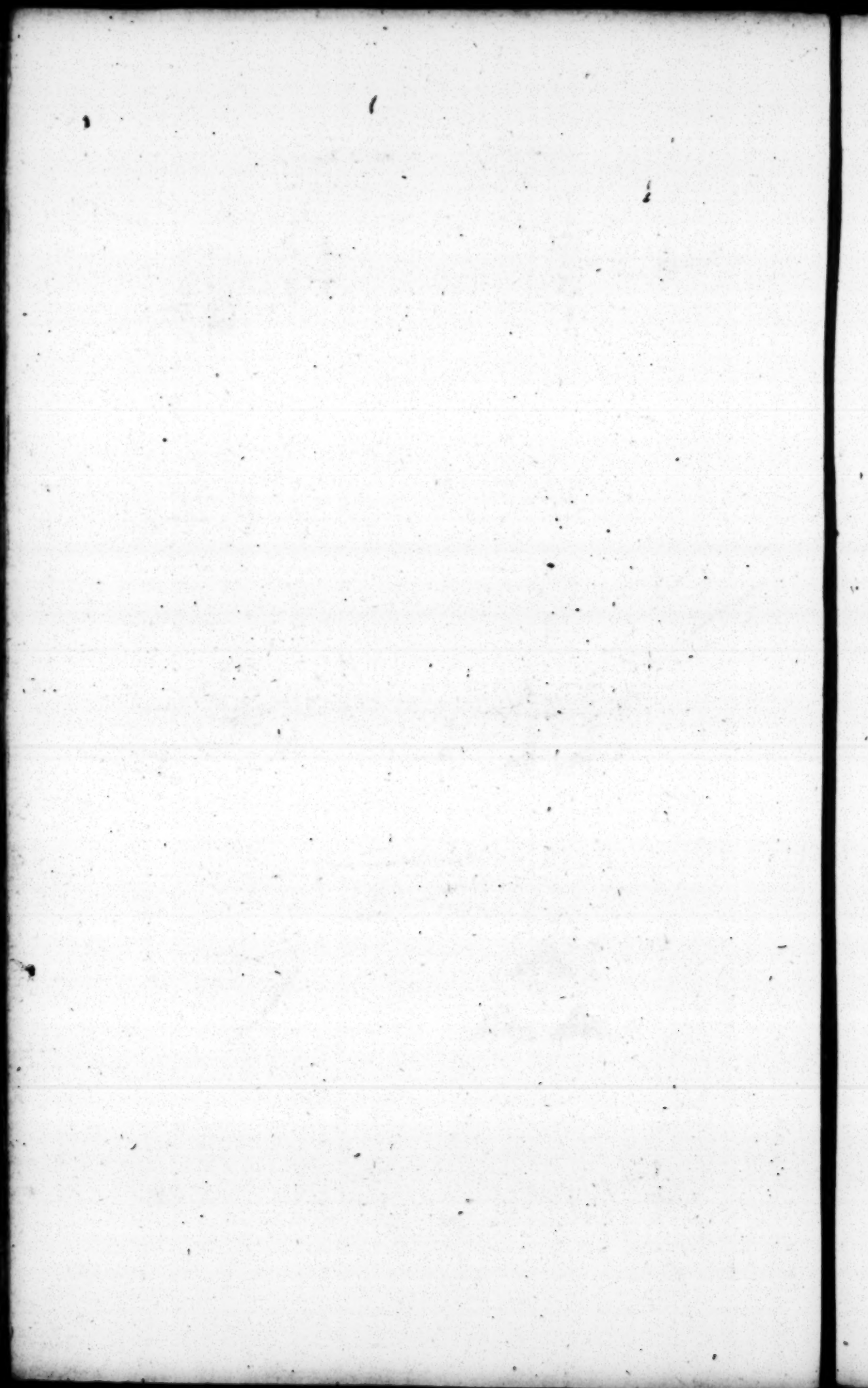


Fig. 3. The plough, paddle to clean the shares, about two feet long.	Fig. 6. The position of the shares as they are in the plough.	F.	I.
Fig. 4. Profile from A to B—A to B—all alike 1f. 10 in.	From A to B	1	6
Fig. 5. A pin $3\frac{1}{2}$ inches long, and chain with a spring key at the end.	From B to C	1	2
	From D to E	2	2
	Fig. 7. from A to B	4	8
	From B to C	1	2

ROBERT HINDE.

ART. XIV. *Directions for the Kitchen Garden in August.*

IN the first part of this month the weather is generally hot and dry, so that watering is still necessary; but towards the latter end we have sometimes frosty nights. We may water in the evenings till the 15th; and after that, if necessary, the morning is to be preferred for that work, for fear of frost.

The first week in this month sow a second crop of cauliflowers to stand the winter, lest the first should run to seed, which they will be apt to do if we have an open season till Christmas, or the ground be light, and lie in a bottom; especially near the sea, it is right to provide against such common accidents. Sow raddishes, cabbages, coleworts, onions, lettuce, chervil, corn-sallad, and spinach, for winter use.

Break off the stems of such artichokes as have done blowing. Sow cresses also to stand the winter; they will heighten the taste of those sallads that are gathered off hot-beds in December and January. Transplant Dutch brown cabbage lettuces to stand the winter; and tie up endive for blanching.

Give fresh earth to your blanching cellery, and continue to raise the earth about it till it is fit for use.

Gather seeds, destroy weeds and snails, &c. as directed for last month.

In the latter part of this month, slip and plant aromatic herbs, as savory, thyme, hyssop, rosemary, marjoram, &c. and cut down those which are run to seed, within three or four inches of the ground.

Till the tenth of this month you may sow turnips in the open field, especially in rich soils; for these roots are not only profitable in the crop, but very much enrich all light soils. In parts near the sea you may sow till the 20th, for in such places, plants will be perfected fifteen days sooner than in the lands round London; in inland places, where the land is

strong and heavy, as about Towcester and Northampton, all plants are about a fortnight later than in the London gardens; so that in those parts turnips should not be sown later than the beginning of August.

Be now very careful to hang bottles of sweet-water among your wall-fruit, otherwise the wasps will destroy the greater part of them.

ART. XV. *Rules necessary to be observed in planting an Orchard. In a letter from a Gardener.*

Mr. SYLVAN,

IN planting of an orchard, great care should be taken that it is done in a soil proper for such fruits as it is intended to be furnished with, otherwise there will be little chance of succeeding. The same soil that will suit many kinds of apples, will not do for pears, cherries, &c. and vice versa.

With respect to the aspect and position of an orchard, a rising ground open to the south-east is to be preferred; but by no means plant on the side of a hill where the declivity is steep; for in such places great rains will wash down the better part of the soil, whereby the trees will lose much of their proper nourishment. But where the ascent is gentle, it is of great advantage to the trees, by admitting the sun and air more freely between them. This is also a great benefit to the fruit, by dissipating fogs, and drying up the damp, which when retained mix with the air, and render it rancid. If an orchard be defended from north, east, and west winds, it will be advantageous; for it is chiefly from those quarters that fruit trees receive the greatest injury. Regard should also be had to distance in planting: If the trees stand too close, blights will ensue; and the damp air being pent in will cause the fruit to be ill tasted and unwholesome.

Plant the rows eighty or hundred feet asunder, and the trees sixty feet apart in each row. Plough the ground between, and sow it with grain in the same manner as though no trees were planted; for until the trees become large the crops will be equally good. By thus ploughing and stirring the ground the trees are rendered more vigorous and healthy; and are not so liable to moss or canker. If the ground you plant has been pasture, plough in the green sward the spring before planting; and if you let it lie fallow one summer, and stir it two or three times, it will greatly mend it.

At

At Michaelmas plough deep in order to loosen it sufficiently for the roots of the trees, which should be planted in October if the soil be a dry one; if moist, March will be a better season. When you have finished planting the trees, stake them to secure them against the wind, which by shaking will, after they have been sometime planted, injure them greatly; for the ground being warm, and for the most part moist, they will soon push out a number of young fibres, which, when broken or displaced, will hinder the growth of the trees.

In the spring following, if the season prove dry, lay a quantity of turf round the roots with the grass side downwards, to prevent the sun and wind from drying the ground: This will save you the trouble and expence of watering.

When you plough the ground between the trees, be careful not to go too deep among their roots, lest you cut them off, which would endanger the trees greatly; but when done cautiously, stirring the ground will accelerate their growth: But never sow very near them, nor suffer great rooting weeds to grow about them, for these exhaust the goodness of the soil. If, after the turf that is laid round the trees be rotten, you dig it in, it will promote their growth and strengthen them.

Some persons plant many sorts of fruit in the same orchard, mixing the trees alternately: this should be avoided; for hereby there will be a great difference in the growth of the trees; which not only spoils the beauty of an orchard, but renders the fruit of the lower trees ill-tasted, by the tall ones overshadowing them. Therefore, if you are determined to have several kinds of fruit on the same spot, observe to plant the largest and quickest growing trees backward, and so proceed to those of less growth, continuing this method through the whole plantation.

The soil of your orchard should be mended, once in three or four years, with dung or other manure.

In making the choice of trees for an orchard, you should procure them from a soil similar to that in which they are to be planted, or rather poorer; for if you have them from a very rich soil, and that in which you plant them be but indifferent, they will not thrive well, especially the first five years after they are planted: It is therefore a wrong practice to make a nursery where young trees are raised, in a rich soil, when the place wherein they are to be planted be a middling or poor one.

The trees should also be young and thriving; for although trees of a considerable size may grow, and produce fruit after being

being removed, they never make so good progress as young ones, and decay much sooner.

The trees, when planted out, require no other pruning than to cut out the dead branches, and such as cross each other so as to render their heads unhandsome. The too often pruning them, or shortening their branches, is very injurious, especially to cherries and stone fruit, which will gum prodigiously, and decay in those places where they are cut; and apples and pears being less tender in their nature, will throw out a greater quantity of side-branches, which fill the heads of the trees with weak shoots whenever their branches are shortened. Add to this, that by such pruning the fruit is cut off, which, on many kinds of fruit trees, is first produced at the extremity of the shoots.

It may perhaps seem strange to some persons that I should allow so much distance to the trees in planting an orchard, because a small piece of ground will admit of but few trees when planted after this method: but they will please to observe, that when the trees are grown up they will produce a much larger quantity of fruit than twice the number planted close, and that the fruit will also be much finer and better tasted. And as a crop of grain may annually be raised on the spot, there is, in reality, no loss of ground.

For a family only, it is hardly worth while to plant an orchard; since a kitchen garden, well planted with espaliers, will afford more fruit than can be eaten while good; especially if the garden be proportioned to the largeness of the family. And if cyder be required, an avenue of apples may be extended across a large field, which will render it pleasant, and produce a great quantity of fruit. In France, fruit trees are planted in the hedge rows for the use of travellers, and add much to the beauty of the public roads, while they administer refreshment to strangers. When will this benevolent practice take place in this country?

I am, Sir, your very humble Servant,

B-shire.

T. K.

ART. XVI. *Diseases of Cows, continued.* By C. Williamson.
To Expel the Cleaning.

THE Cleaning or Placenta, after the expulsion of the calf, will sometimes remain behind too long, whether adhering to the womb or separated from it, and in this situation the cow

cow is unable, by the unassisted efforts of nature, to expel the offending burthen; and although I declare against all violence, some means are not only salutary but absolutely necessary, not by manual operation, but by the assistance of anodyne medicines, and such as are possessed in some degree of an antiseptic virtue; among these we may class ivy berries, cummin seeds, fenugreek seeds, &c.; to these may be occasionally added opium, and, if more cordial remedies are wanted, grains of paradise, and be sure to assist the whole with warm diluting liquors, such as water-gruel, to a gallon of which may be added a pint of ale or half a pint of strong beer. The forms of exhibition are, take half a pint of ivy berries, boil in a quart of milk gently to a pint, strain and give to the cow. If need be, repeat the dose in four hours.

Take Fenugreek seeds, one ounce,
Cummin seeds, *℥*ss
Aniseeds, each half an ounce,
Grains of Paradise, one dram.



Let the whole in powder be given in a pint of warm ale or gruel for a dose; to be repeated in four hours, if there be occasion.

If the cow seems in very great pain, dissolve in the ale five grains of opium—or add to it sixty drops of liquid laudanum.

[To be continued.]

ART. XVII. To make Honey-Wine.

TO every gallon of water add three pounds and a half of honey, boil gently so long as the scum rises; let it stand in an open vessel about a week, after that tun it, and in due time stop it down.

This liquor will improve by age, and is exceeding wholesome if kept a proper time. It should not be drawn off or meddled with for two years, but if kept longer the better.

ART. XVIII. A Cure for the Scurvy.

A Discovery has lately been made of the amazing powers in Goose-grass, (otherwise known by the name of Clivers) for curing the most inveterate scurvy. A correspondent assures us, from his own experience, and the experience of a great number of persons in the neighbourhood of Bow, that its effects are astonishing. It was first introduced there by a maid,

maid, in the service of Mrs. Jones, at Oldford, the pains of whose hands were so violently afflicted with sores, that she told her mistress she must have recourse to her old medicine, which, upon enquiry, was found to be the juice of fresh goose-grass; by the use of which she was soon cured; and the report being spread of the virtues of that herb, many other persons were induced to make trial of it; among whom was a Mrs. Kimblin, master of the school at Bow, who, having first cured himself, introduced it among his boys, several of whom he cured of scorbutic humours, and one in particular remarkably afflicted! From these and other instances, our correspondent was encouraged to make trial of it for a troublesome scurvy eruption in his face, and such was the effect, that his words are, "he should hold himself inexcusable before God, and to his fellow-creatures, if he did not attempt to make known the discovery." We must add, that now is the time to gather the plant in the highest perfection; that a tea-cupful of the expressed juice is to be taken fasting, ten mornings successively; and that in the spring the young plants may be made and drank as tea, or boiled with water-gruel, or milk-pottage, having no ill-taste.

ART. XIX. *Directions for making Roses blow very late.*

TO make roses or other flowers come late is a pleasing experiment, and conduces much to the beauty of our garden at seasons when, in the common course of vegetation, there are few flowers left.—First, cut off the tops of the rose-trees immediately after they have done bearing, and then they will flower again in November; but they will not come just on the tops where they have been cut, but on the side shoots.

Secondly, Pull off the buds of the roses when they are newly knotted; for then the side-branches will bear in the autumn: In both these cases the effect is the same, the sap is restrained for a time, and diverted into new channels.

Thirdly, Lay the roots bare for some days about Christmas; by this means the sap is stopped in its progress upwards. Cover the roots again with earth, and it will ascend, but slower, and later.

Fourthly, Gird the body or stem of the rose-tree with pack-thread, and that will restrain the sap from rising through the bark, which is full of sap-vessels, and cause it to leaf and flower late.

ART. XX.

The EDITOR of the FARMER'S MAGAZINE having been favoured with the following public-spirited Address, thinks no Apology necessary for laying it before his Readers.

For the FARMER'S MAGAZINE.

To the Gentlemen of the Counties of SOMERSET, GLOUCESTER, WILTS, and DORSET in general; and of the City of BATH in particular.

GENTLEMEN,

EVERY attempt to promote the happiness of mankind at large is laudable in its nature, and merits public attention in proportion as the means proposed are adapted to the attainment of so desirable an end. The giving encouragement to those arts on which the welfare of a nation essentially depends, is an honourable and beneficent undertaking; and a duty peculiarly incumbent on those who are possessed of affluence, and clear intellectual faculties:—Nor is this a duty which requires a sacrifice of interest; for whatever tends to increase the general good, will be uniformly found the most solid and permanent security of the good of individuals.

It is a maxim verified by the experience of all civilized nations, that the riches, strength, and glory of a state, consist not so much in extent of territory and population, as in the proper employment of the several classes for the improvement of natural advantages, and the advancement of useful arts; it being the well-directed attention of any people, which constitutes national happiness and glory.

In a country like ours, which nature has furnished with *internal* sources of wealth, both numerous and inexhaustible, Agriculture of all employments claims our first and most serious attention. Under the wisest governments of antiquity, and particularly that of the Roman Empire, this art received all possible encouragement. They not only promoted it by precept and instruction, but by the example of their senators and dictators, who disdained not to be actually employed in the labour of the plough. "This" (says an ingenious author) "seems to have been the refined policy of men well read in the principles and affections of human nature; to attach to necessary labour, the honour that must necessarily result from following the practice and example of the greatest men in the state."

Agriculture is an unfailling spring, from whence our riches flow through innumerable channels to every part of the community; abundantly supplying every natural want, and furnishing also the means for all the elegancies of life.

Most of the arts and sciences, though highly useful, as they have gradually tended to rescue us from antient barbarism, to refine and soften our manners, and to embellish life with many of its most rational and exquisite entertainments, are but secondary causes of our happiness. From agriculture proceed (as so many streams from one great source) the materials, the ingenuity, the spirit for advancement in those arts and sciences, as well as every social and domestic enjoyment; and therefore that is the primary and most important object of public consideration.

Reflections of this kind have induced many ingenious and public-spirited gentlemen in London, Norwich, York, and divers other places, to render essential service to their country by instituting societies for

the encouragement of agriculture, manufactures, commerce, and the useful arts and sciences. Pecuniary and honorary premiums have been given to the diligent and ingenious, who have excelled in the various departments of husbandry, in planting, in useful manufactures, and in the most curious specimens of art. From these laudable, and truly excellent institutions, many salutary effects have resulted; a spirit of industry has been excited, a generous emulation has produced efforts by which many valuable discoveries have been made, many useful arts brought to a state of perfection unknown to former ages, and our commerce extended to every quarter of the globe.

The agricultural society in the city of Norwich has been instituted only a few years, but the good effects of it, in the encouragement it has given to planting, and various improvements in husbandry, are strikingly obvious. In the large and opulent county of Norfolk, agriculture is now brought to as high a state of perfection as in any part of Great Britain; and many of the late improvements there have been made in consequence of this noble institution.

The premiums offered by the Norwich society have excited numbers of farmers to vie with each other in the various branches of husbandry, in planting waste lands, in improving sandy soils, in draining fens, in cultivating grasses, hemp, and turnips, and in raising carrots, potatoes, and Scotch cabbage for cattle. The benefits hence accruing have not been confined to the individuals themselves, but extended to every class throughout that county and parts adjacent. The value of estates has been greatly increased; the renters of lands have made fortunes; the poor have not only had full employment, but an increase of wages; and the various products of the earth have been at once improved in quality, and multiplied in quantity, to a degree of which many distant counties can scarcely form an adequate idea.

It is well known, that in the western part of this kingdom, Agriculture has not yet attained to that state of perfection in which it flourishes in the eastern part. In the extensive and populous counties of Somerset and Wilts in particular, and some parts of Gloucester and Dorset, the Farmers are, in general, too much attached to the ancient mode of husbandry, and want some powerful stimulus to excite them to adopt methods which the experience of many other counties hath proved to be far more successful. In the cultivation of arable land, the improvement of waste, or barren soils, and the management of turnips, there is great room for improvement, and for the introducing a far more excellent system of husbandry. Planting, also, is an article in which the land-owners of these counties are materially deficient, as it is capable of being made generally subservient to the interest of the planters themselves, and abundantly so to their posterity, not to mention the advantages which would result to the nation from so laudable a practice. Many thousands of acres, now unprofitable unless for a little sheep-feed, might in a few years, by planting them with such kinds of timber and forest trees as are best adapted to the soil, be much increased in value.

As the most likely means to promote improvements so desirable, and so conducive to the present and future good of the public, the institution of a Society, in some respects similar to those already established in London, Norwich, and York, is strongly recommended to the Gentlemen of the aforesaid counties in general, and of the city of Bath in particular. In such a polite and flourishing city, and in counties

ties

ties so considerable, surely a proposition for so honourable and advantageous an institution cannot fail of meeting with some regard. Under this persuasion, a well-meaning individual, who wishes to promote the good of his country to the utmost of his abilities, is encouraged to solicit the attention of ingenious and public-spirited Gentlemen, inhabitants of the counties and city above-mentioned, and also those who occasionally resort to the latter from more distant parts, not doubting but they will see the importance of the object, in proportion as they shall be pleased to consider it.

Encouraged also by the concurring opinion and advice of some of his ingenious friends, he now proceeds to inform them, that there is a scheme in contemplation for the speedy establishment of an Agricultural, &c. Society, in this city, and that the outlines of a general plan, with some other necessary materials, will be laid before a meeting to be appointed for that purpose, the time and place of which will be advertised in the public papers.

With men of genius and liberal minds, he knows that an apology is unnecessary for the freedom he has taken, and with which he is about to conclude: he therefore, without ceremony, respectfully intreats that such public-spirited Gentlemen as shall be disposed to honour so laudable an establishment with their protection, will condescend to communicate to him any thoughts on the subject which they may deem necessary, that he may form some opinion how far his earnest wishes and endeavours are likely to be attended with success.

St. James's-Parade, Bath,

EDMUND RACK.

July 24. 1777.

ARTICLE XX.

Mr. SYLVAN,

THE following receipt, for preventing infectious fevers, &c. is well known, yet not perhaps so universally as its utility may require, especially by those persons whose profession may oblige them to attend prisoners or sick persons, I therefore beg you will insert it in your next Magazine. This composition is called "The Four-Thieves Vinegar," from four Thieves who were ordered for execution in France, at a time when the plague raged violently; but upon producing this receipt, and its good effects being experienced, they received free pardons.

Your's,

CLERICUS.

THE FOUR THIEVES VINEGAR.

Take of rue, sage, mint, rosemary, wormwood, and lavender, each one handful; infuse them in a gallon of the best white-wine vinegar; put all into a stone bottle closely covered, and set it upon warm ashes, or near the fire for eight days; then strain it through a flannel, and bottle it: To every quart put an ounce of camphire, cork it close, and it will keep for years. With this wash your mouth, rub your temples and your loins every day; snuff a little up your nostrils when you go into the air, and carry about you a sponge dipped in the same, and apply it to your nose when near any place or person that is infected.

ARTICLE XXI.

Adelphi Buildings, April 9, 1777.

THE Society for the Encouragement of Arts, Manufactures, and Commerce, propose, in pursuance of their plan, to bestow the following premiums:

Premiums for Planting and Husbandry.

ACORNS. For setting or sowing the greatest quantity of land, not less than ten acres, with acorns, between the 10th of September, 1777, and the first of May, 1778; and for fencing and preserving the same effectually, in order to raise timber; the gold medal.

Certificates to be produced to the Society, on or before the first Tuesday in November, 1778, of the setting or sowing agreeably to the above conditions, not less than six bushels of acorns on an acre.

For the greatest quantity of land, not less than five acres set or sown with acorns, agreeably to the above conditions; the silver medal.

CHESNUTS. For setting or sowing the greatest quantity of land, not less than six acres, with Spanish Chesnuts, before the first day of May, 1778, and for effectually fencing and preserving the same, in order to raise timber; the gold medal.

For the second greatest quantity, not less than four acres; the silver medal.

For the third greatest quantity, not less than two acres; the silver medal.

Certificates of setting or sowing agreeably to the above conditions (and that there are 500 Spanish Chesnut plants at least on each acre) must be delivered to the Society, on or before the first Tuesday in November, 1778.

ELM. For planting the greatest number of the English Elm, not less than 1000, between the 24th of June, 1777, and the 24th of June, 1778, and for the effectually fencing and preserving the same, in order to raise timber; the gold medal.

For the second greatest number not less than 500; the silver medal.

For the third greatest number not less than 400; the silver medal.

Certificates of having planted agreeably to the above conditions, and specifying the distance of the trees, must be delivered to the Society, on or before the first Tuesday in November, 1778.

SCOTCH FIR. For planting out from the 24th of June, 1777, to the 24th of June, 1778, at a distance not less than four feet, the greatest number of that Pine, commonly called the Scotch Fir, not less than 20,000, to be two years old at least when planted out, and for effectually fencing and preserving the same, in order to raise timber; the gold medal.

For the second greatest number, not less than 10,000; the silver medal.

For the third greatest number, not less than 10,000; the silver medal.

Certificates of planting according to the above conditions, and of the state of the plants at Michaelmas preceding the date of the certificates, to be delivered, on or before the last Tuesday in December, 1778. Not less than one acre to be planted in any one inclosure.

CEDAR. For planting out from the 24th of June 1777, to the 24th of June, 1778, at a distance not less than three feet, the greatest number of the Red Virginia Cedar, not fewer than 3000, the plants to be between two and four years old when planted out, and for effectually fencing and preserving the same, in order to raise timber; the gold medal.

For

For the next greatest number, not fewer than 3000; the silver medal.
Certificates to be produced on or before the last Tuesday in Nov. 1778.

CEDAR. For planting out from the 24th of June, 1778, to the 24th of June, 1779, at a distance not more than four feet, the greatest number of the Red Virginia Cedar, not fewer than 5000, the plants to be between two and four years old when planted out, and for effectually fencing and preserving the same, in order to raise timber; the gold medal.

For the next greatest number, not fewer than 3000; the silver medal.
Certificates to be produced on or before the last Tuesday in Nov. 1779.

SPRUCE FIR. For planting out in one plantation, in the year 1777, at proper distances, the greatest number of Spruce Firs, not less than 10,000, to be two years old when planted out, and for effectually fencing and preserving the same, in order to raise timber; the gold medal.

For the second greatest number, not less than 6000; the silver medal.

For the third greatest number, not less than 4000; the silver medal.

Certificates to be produced on or before the last Tuesday in Jan. 1778.

The same premiums are extended to the planting Spruce Firs, at a distance not more than three feet, to the year 1778.

Certificates to be produced the first Tuesday in January, 1779.

SILVER FIR. For planting out in the year 1777, at not more than four feet distant, the greatest number of Silver Firs, not less than 2000, and for effectually fencing and preserving the same, in order to raise timber; the gold medal.

For the second greatest number, not less than 1000; the silver medal.

For the third greatest number, not less than 1000; the silver medal.

Certificates to be produced on or before the last Tuesday in Jan. 1778.

The like premiums will be given on the same conditions for Silver Fir, planted in the year 1778. Certificates to be produced on or before the last Tuesday in January, 1779.

LARCH. For planting out, from the 24th of June, 1777, to the 24th of June, 1778, at a distance not more than three feet, the greatest number of Larch trees, not less than 5000, the plants to be between two and four years old when planted out, and for effectually fencing and preserving the same, in order to raise timber; the gold medal.

For the second greatest number, not less than 3000; the silver medal.

Certificates of planting according to the above conditions, and of the state of the plants at Michaelmas, to be produced on or before the last Tuesday in Nov. 1778.

The like premiums will be given on the same conditions, for planting out Larch Trees, between the 24th of June, 1778, and the 24th of June, 1779.—Certificates to be produced on or before the last Tuesday in November, 1779.

The like premiums will be given on the same conditions for planting out Larch Trees, between the 24th of June, 1779—80.—Certificates to be produced on or before the last Tuesday in November, 1780.

UTILITY OF LARCH. To the person who shall send in the most satisfactory account, verified by experiments, of the Utility of Larch Trees, for the various purposes of timber; the gold medal, or 30l.—The accounts to be produced on or before the second Tuesday in December, 1781.

NORFOLK WILLOW. For the greatest number of acres, not less than six, planted in the year 1777, with Norfolk Willows; the number of cuttings to be at least 1000 on each acre, properly fenced and secured.

Cer-

—Certificates to be produced on or before the last Tuesday in December, 1778, of the said planting, and that the trees were then growing on the land; the gold medal, or 30l.

OCCIDENTAL PLANE TREES. For the greatest quantity of land, not less than two acres, planted with Occidental Plane Trees, in the year 1777, not less than 500 on each acre, properly fenced and secured.—Certificates to be produced on or before the last Tuesday in December, 1777, of the said planting, and that the trees were then growing; the gold medal.

The same premium will be given on the same conditions for Occidental Plane Trees, planted in the years 1778, or 1779.—Certificates to be produced on or before the last Tuesday in December of each year.

UPLAND OR RED WILLOW. For the greatest number of acres, not less than three, planted in the year 1777, with Upland or Red Willow, properly fenced and secured, the number of plants on each acre to be at least 700.—Certificates to be produced on or before the last Tuesday in December, 1777; the gold medal, or 30l.

ASH. For planting the greatest number of acres, not less than six, in the year 1777, with Ash for Timber; the plants to be at least two years old, properly secured and fenced; the gold medal, or 30l.

For the next greatest number of acres, not less than four; the silver medal, or 20l.—Certificates to be delivered on or before the second Tuesday in March, 1778.

The same premiums are extended to the years 1778, and 1779.

LOMBARDY OR PO POPLAR.* For planting in the year 1777, the greatest number, not less than 1000, of the Lombardy Poplar, or Po Poplar, properly fenced and secured, for raising timber; the gold medal.—Certificates to be produced on or before the second Tuesday in November, 1777.

The same premium is extended to the year 1778.—Certificates to be produced on or before the second Tuesday in November, 1778.

TREES FOR USE WHEN EXPOSED TO THE WEATHER. To the person who shall send the most satisfactory account verified by experiments, to determine which of the following trees is of the greatest utility for timber, or poles, for use when exposed to the weather, viz. Larch; Ash; Willow; Black Poplar; Spanish Chestnut; Alder; or Lombardy Poplar; the gold medal, or 20l.—The accounts to be produced on or before the second Tuesday in December, 1781.

PLANTING BOGGY OR MORASSY SOILS. For an account of the best set of experiments sent by the planter, or his representative, to ascertain the comparative advantages of planting boggy or morassy soils, with White Poplar, Black Poplar, Lombardy Poplar, and Willow; the gold medal.

It is required, that not less than half an acre be planted with each, and the plants to be not more than four feet asunder.

It is also required, that the plantation stand fourteen years, at the end of which to be all cut down and measured, or accurately measured standing, and certificates of the measure and value, and that the whole is properly fenced and secured, to be produced on or before the first Tuesday in January, 1792.

N. B. Any information relative to the state of the plantation, if sent to the Society, between the times of planting and claiming the premium, will be thankfully received.

The

* This tree is called by some the Pine Poplar.

The same premium is extended two years further.—Certificates to be produced on or before the first Tuesday in January, 1793, and 1794.

TRANSPLANTING WHEAT. For the best account of a set of experiments to determine whether in any, or what cases the transplanting Wheat may be practised to advantage, to be produced on or before the first Tuesday in January, 1778; the gold medal.

It is expected, that the time of sowing and transplanting, the nature of the soil, the produce and quality of the grain, and the expence of transplanting, be particularly specified; and that these experiments be made in the open field.

It has been hinted, that when a crop of Wheat has been injured by the worms, or other accidents, the transplanting roots from those parts of the field where they stand the thickest, may be attended with advantage.

If an experiment of this kind is made, it is required that a comparative trial be also made, by sowing and hoeing in grain on part of the spots so injured.

CULTURE OF WHEAT. For the best set of experiments to ascertain whether it is most advantageous to cultivate Wheat, by sowing it in the common broad-cast way, or by drilling it in equi-distant rows, hand-hoeing the intervals; the gold medal, or 20l.

It is desired that the distance between the rows may not exceed eleven inches, and that an account of the nature and condition of the land on which the experiments are made, together with an account of the produce of the corn, be produced to the society on or before the first Tuesday in March, 1778.

The same premium is extended one year further.

FOR ASCERTAINING DISTANCES OF ROWS IN DRILLING HUSBANDRY. For an account of the best set of experiments, to ascertain the respective distances of the rows, which will be most advantageous in the drill culture of any of the several kinds of Grain, Pulse, and Roots, with a description of the hoeing instruments employed in the culture; the gold medal.—The accounts to be delivered in on or before the first Tuesday in December, 1777.

QUANTITY OF CORN TO BE SOWN. For an account of the best set of experiments made to determine the most proper quantity of Corn of any kind, to be sown in broad-cast, on an acre of land, according to the different qualities of soil; to be produced on or before the first Tuesday in February, 1779; the gold medal.

It is required that the person claiming the premium, do give an account at what period the land was manured; of the kind and quantity of the manure laid on each acre; as also, when the land was last under a summer fallow, and at what time the corn was sown, and the quantity of seed and produce.

QUANTITY OF WHEAT. To the person who shall raise the greatest quantity of Wheat, per acre, on not less than one acre of land; the gold medal or 20l.—Certificates of the exact produce, and an account of the soil, preparation, and culture; to be produced on or before the first Tuesday in December, 1777.—No claim for less than five quarters will be admitted.

BARLEY, OATS, and PEAS. The same premium will be given on the like conditions for the greatest quantity,

Not less than six quarters of Barley, }
Eight quarters of Oats, } per Acre.
Five quarters of Pease, }

QUAN-

QUANTITY OF BEANS. To the person who shall raise the greatest quantity of Beans, being not less than eight quarters on one acre of land, the gold medal, or 15*l*.—Certificates of the exact produce, with an account of the soil, preparation, culture, and expence; and that the beans were reaped, threshed, and measured in the field the same day; to be produced on or before the first Tuesday in December, 1777.

The same premium is continued to 1778.

QUANTITY OF WHEAT. To the person who shall raise the greatest quantity of clean Wheat, per acre, not less than one acre of land; the gold medal, or 20*l*.—Certificates, with an account of the soil, preparation, culture, and produce, and that the Wheat was reaped, threshed, and measured in the field the same day, to be produced on or before the first Tuesday in December, 1778. No claim for less than five quarters will be admitted.

BARLEY, OATS, AND PEASE. The same premium will be given on the like conditions for the greatest quantity,

Not less than six quarters of Barley,
Eight quarters of Oats,
Five quarters of Pease, } per Acre.

CULTIVATING TURNIPS AMONG BEANS. For an account of the best experiments made to determine the advantages arising from cultivating Turnips among Beans, either in the drill or broad-cast way, on at least ten acres of land, to be delivered on or before the first Tuesday in November, 1777; the gold medal.

For a similar account of the next greatest quantity of land, five acres at least; the silver medal.

The Society expect to receive a particular account of the management of the land, from the sowing of the Beans, to the last time of hoeing or cultivating the turnips; with an account of the quantity of land, the produce, the soil, the aspect, and the method, and time of eating them off.

The Society have received satisfactory accounts that Turnips have been drilled between horse-hoed Beans, and sown in the broad-cast way among planted Beans to great advantage.

TURNIPS. For the best account of experiments, to determine the comparative advantages of the drill, or broad-cast method in the cultivation of Turnips; the gold medal, or 20*l*.—The accounts to be delivered in, on or before the first Tuesday in March, 1778.

The same premium is extended one year further.

LUCERNE AND BURNET. For the best set of experiments to determine the comparative advantage of the drill and broad-cast methods in the culture of Lucerne and Burnet, severally; the gold medal.—The accounts to be delivered, on or before the first Tuesday in December, 1777.

LUCERNE. To the person who shall cut the greatest quantity of green Lucerne, per acre, from not less than three acres in one year; the gold medal.

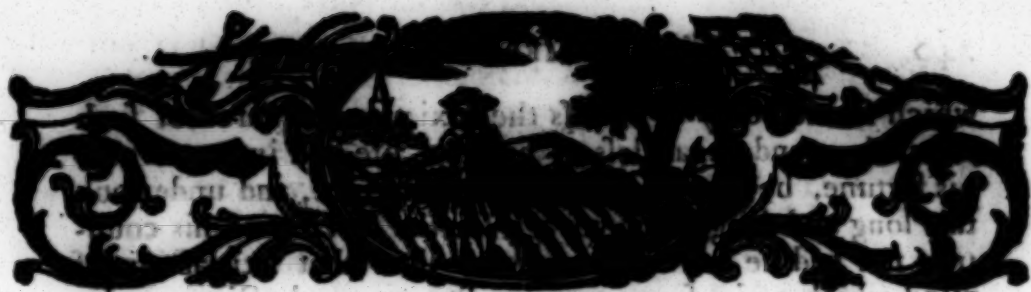
For the next greatest quantity, not less than two acres; the silver medal.

Certificates of the number of acres, the quantity cut, the times of cutting, nature of the soil, and method of culture, to be produced on or before the second Tuesday in January, 1779.

By Order of the Society,

SAMUEL MORE, Secretary.

[To be continued.]



T H E

FARMER'S MAGAZINE.

A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]

American Husbandry.

VIRGINIA. **I**N the reign of Queen Elizabeth, Sir Walter Raleigh obtained a patent for this tract of country, and called it Virginia, in honour of his Royal mistress; but Sir Walter had too much business on his hands to give proper attention to the colony himself, and those who were entrusted with the care of it behaved so ill by using the neighbouring Indians with haughtiness and ill manners, instead of conciliating their affections by affability and making them an acknowledgement for the lands they possessed, that the settlers became distressed, and in this situation they were neglected by their mother country: at last, overcome by fatigue and the want of necessaries of life, they abandoned the country and returned to their native homes. A second and a third colony fared no better: a fourth settlement, by intestine disputes neglecting the cultivation of their lands, and quarrelling with the Indians, were reduced to less than half their number: with the poor remains they were returning home in a famished and desperate condition, when they were aided by the Lord Delaware, who met them with provisions and other necessaries for their relief.

Lord Delaware was one of those few noblemen who are born to serve mankind, had travelled with as much zeal and industry to support and provide for the service of this infant colony, at that time so unpromising, as some have used for purposes of another kind. He had accepted of a government

which seemed only to possess the anxieties and cares of such a situation, and, regardless of his own life and inattentive to his fortune, he accepted this barren province, and undertook this long and dangerous voyage for the service of his country; nor had he any other reward than that satisfaction of mind which arises from a propensity to good actions, and a prospect of those honours which posterity will bestow on those men who prefer the general good of mankind to their immediate interests. He prevailed on them to return, he comforted them under their afflictions, he gently pointed out the error of their conduct, whence originated their misfortunes, and by mixing the tenderness of a parent with the authority of a magistrate, he made up their quarrels, and amicably adjusted their divisions; he reconciled them to government and subordination in authority, by exhibiting in his own conduct the blessings which would thence arise; and made them thoroughly sensible of the necessity there was of just and wholesome laws in every community whatever.

After he had thus provided for the necessary internal subsistence and welfare of his colony, he exerted himself to put them in a proper and secure state with regard to the Indians, whom he found from their late successes, very troublesome, and on account of the miserable state of the settlers, very haughty, insolent, and assuming: vigorous measures only were capable of convincing the Indians, now elated with conquest, of their mistake, and these being properly carried into execution, the Indians were overthrown, and convinced from fatal experience that they were unable to face the English when their force was properly exerted: they were awed into peace, and the colony firmly established.

Lord Delaware now found it necessary to return to England for the recovery of his health, which, by his constant attention to the affairs of the settlement, and the air of an uncultivated country, was much impaired, but he left his son endowed with great spirit and abilities his successor or deputy in the government, with Sir Thomas Gates, Sir George Summers, the Hon. George Piercy, Sir Ferdinand Wenman, and Mr. Newport, for his council. These and several other persons of rank and fortune attended Lord Delaware in the expedition, and gave a credit to the colony.

Lord Delaware did not forget the colony on his return to England, but considering himself as nearer the fountain head, thought it his duty to turn the spring of the royal favour more copiously upon the province which he superintended. For
eight

eight years together he was indefatigable in doing every thing that could tend to the peopling, the support, and the good government of this settlement, and he died in the pursuit of the same object, in his voyage to Virginia, with a large supply of people, cloathing and goods.

The colony of Virginia was so fast rooted by the care of Lord Delaware, that it was enabled to stand two terrible storms, two massacres made by the Indians, in which the whole colony was nearly cut off; and to subdue that people so as to put it utterly out of their power for many years to give them the least disturbance.

In the fatal troubles which brought Charles the first to the block, and overturned the constitution of England, many of the cavaliers fled for refuge to this colony, which by the general disposition of the inhabitants, and the virtue of Sir Wm. Berkly, held out for the crown, until the parliament, rather by stratagem than force, reduced them. And what is remarkable, if it may be depended upon with any certainty, they deposed Cromwell's governor, set up Sir Wm. Berkly again, and declared for King Charles the second, a good while even before the news of Oliver's death could arrive in America.

After the Restoration, there is nothing very interesting in their history; except that soon after, a sort of rebellion arose in the province from mismanagements in the government, from the decay of their trade, and from exorbitant grants inconsiderately made, which included the settled property of many people; this raised a general discontent amongst the planters, which was fomented and brought to blaze out into an actual war, by a young gentleman whose name was Bacon. He was an agreeable man, of a graceful presence and winning carriage; he had been bred to the law, had a lively and fluent expression, fit to set off a popular cause, and to influence men who were ready to hear whatever could be said to colour in a proper manner what was already strongly drawn by their own feelings. This man, by a specious, or perhaps a real, though ill-judged regard for the public good, finding the governor slow in his preparations against the Indians, who were ravaging the frontiers of the province, took up arms without any commission, to act against the enemy. When he had sufficient force for this purpose, he found himself in a condition not only to act against the enemy, but to give law to the governor, and to force him to give a sanction by his authority to those proceedings which were meant to destroy it.

Bacon, armed with a commission and followed by numbers, prepared to march and attack the Indians, when Sir William Berkly recalled him, proclaimed him as a traitor, and offered a reward for his apprehension: this brought matters to extremities, the people were inflamed, and adhered to Bacon, who still persisted; the adherents as well as Bacon were proclaimed traitors by the Governor, who put himself at the head of a small body of troops which he had raised in Maryland, and of such Virginians as remained faithful, and sent to England for supplies. On the other hand, Bacon repaired to the capital, called an assembly, and disposed of all things to his pleasure for six months: thus every thing tended to produce a civil war, when in the very height of the confusion, Bacon was suddenly taken ill and died. The people now without a leader, proposed an accommodation, which was listened to, and peace again restored.

Virginia is divided into four parts, the north, the middle, south and east. The north contains the counties of Northumberland, Lancashire, Westmoreland, Richmond, and Stafford. The middle contains Essex, Middlesex, Gloucester, King and Queen, King William, New Kent, Elizabeth, Warwick, York, and Princess Ann. The south division contains, Norfolk, Nanfamund, Isle of Wight, Surry, Prince George, Henrico, Charles, and James. The east contains Accomac.

This province is situated between the 74th and 80th degrees of west longitude; and between the 36th and 39th of north latitude. It is about 750 miles in length, and about 240 in breadth; bounded by Carolina on the South, by the river Potomack, which divides it from Maryland, on the north east; by the Atlantic ocean on the east, and by the Apalachian mountains on the west.

The climate of this province is subject to violent and sudden changes, the air and seasons depending greatly on the winds; the north and north west winds are piercing cold, and either clear or stormy; the south east and south, hazy and sultry hot; but in winter the air is clear and dry. The frosts are short, but so severe, that rivers, three miles in breadth, are frequently frozen entirely over. The spring is about a month earlier than in England: in April the rains are frequent; in May and June the heat increases; and the summer nearly resembles ours. The heat being mitigated with gentle sea breezes that begin to blow about nine in the morning, increasing and decreasing as the sun rises or falls. In July and August these breezes cease, when the air becomes stagnant and sultry

lultry hot: in September the weather generally changes suddenly, and heavy rains fall, which produce a terrible effect on the health of the inhabitants. Storms of thunder and lightning are very frequent here, but they seldom are attended by any mischief. It is a general observation in regard to all these colonies, that as they become inhabited, and the lands cleared, the air is improved, and rendered more salutary; for the whole country, before it was planted, was one continued forest interspersed with swamps or marshes.

Virginia is a low flat country, in which there is scarce a hill or stone to be seen, except here and there some rocks of iron ore, and some banks of petrified oyster shells. In the inland parts the soil is light and sandy, but towards the sea-coast, and on the banks of the rivers, it is generally rich.

It may be judged, from the climate and the soil, I have described, in what excellence and plenty every sort of fruit is found in Virginia. Their forests are full of timber trees of all kinds, and their plains are covered for almost the whole year with a prodigious number of flowers and flowering shrubs, of colours so rich and of a scent so fragrant, that they occasioned the name of Florida to be originally given to this country. This country produces several medicinal herbs and roots, particularly the snake root and ginseng, which has been discovered in some parts of it.

Horned cattle and hogs have multiplied almost beyond belief, though at the first settlement the country was utterly destitute of these animals. The meat of the former is as much below the flesh of our oxen, as that of the latter exceeds that of our hogs. The animals natural to the country are deer, of which there are great numbers; a sort of panther or tiger, bears, wolves, foxes, racoons, squirrels, wild cats, and one very uncommon animal called the opossum: this creature is about the size of a cat, and besides the belly, which it has in common with all others, has a false one beneath it, with a pretty large aperture at the end towards the hinder legs. Within this bag or belly are a number of teats; upon these, when the female of this creature conceives, the young are formed, and there they hang like fruit upon the stalk, until they grow in bulk and weight to their appointed size; then they drop off, and are received in the false belly, from which they go out at pleasure, and in which they take refuge when any danger threatens them.

They have all our sorts of tame and wild fowl in equal perfection, and some which we have not; and a vast number of birds

birds of various kinds, valuable for their beauty or their note. The white owl of Virginia is far larger than the species which we have, and is all over of a bright silver-coloured plumage, except one black spot upon his breast; they have the nightingale called from the country, a most beautiful one, whose feathers are crimson and blue; the mocking bird which imitates the notes of other birds, a green sparrow, the rock bird, and the humming bird. The sea coast and rivers abound with great variety of fish, among which the most remarkable are, the sting-grass, the toad-fish, and the tobacco-pipe-fish: In the spring they have great quantities of herrings, which are in general larger than those on the British coast: Among the reptiles they have rattlesnakes and lizards, and a species of worms are hid in the waters, which by a kind of screw proboscis pierce the bottoms of the boats and ships when the pitch is worn off and do a great deal of mischief.

[To be continued.]

ART. II. *Observations on raising and planting the OAK,*

From Dr. Hunter's New Edition of Evelyn's Sylva.

[Continued from p. 182.]

IN Scotland, and in some of the northern counties of this kingdom, the practice of sowing their waste lands with acorns, chesnuts, beech-mast, fir-seeds, ash-keys, &c. is much recommended, and there is not the least doubt but that posterity will enjoy the benefits arising from this judicious practice. The expence attending the sowing an acre of waste land with various seeds of forest-trees, is trifling when compared to that of planting; and if all other things were equal, that alone would be decisive. Charles Turner, Esq; of Kirkleatham, in the county of York, has within these few years sown upwards of 400 acres of waste and moor lands with the various seeds of forest trees, and I am credibly informed that he intends to sow 100 acres annually, for a series of years; so that should his example be followed, and there is no doubt but it will, in consequence of his present success, we shall in half a century see our rocky, moor, and barren lands covered with wood to the advantage of the rising generation. In the neighbourhood of coal and lead mines, and iron forges, such woods will become highly profitable at an early period; and considering the great demand that is constantly made from such places for all kinds of wood, it is matter of surprize that the cheap method of raising

raising woods from seeds and seedling plants, has been so long neglected. As example is always better than precept, I beg leave to recommend a view of Mr. Turner's estate at Kildale, to such gentlemen as wish to bring their weak, rocky, and moor lands into the most profitable cultivation. The following method was there practised :

The men being divided into parties, each consisting of three men, the first man with a paring spade took up a turf in the usual manner. The second man stirred the earth with a spade, and the third distributed the acorns, chesnuts, fir-seeds, &c. and afterwards covered them. Where the soil was shallow, or gravelly, the second man chopped the turf down to the gravel, or rock, after which the third man introduced the seeds, and closed the earth. In some place, seedling firs, larches, and oaks, were put down in the place of seeds; which, from their *youth*, were soon reconciled to their change of situation; and this practice was highly judicious. Had they been plants of three or four years growth, it is more than probable that by far the greater number would have died. It fared otherwise with the infant plants. By attending to the above regular mode of sowing, and seedling-planting, an extensive tract of country may be covered with wood in a few years, at a moderate expence. The work, when conducted in this manner, should be performed very early in the spring; but in such lands as are apt to swell after frosts, it will be best to remove the turf, and stir the soil in the autumn previous to sowing, whereby the earth will become more solid, and the infant plants be less liable to be thrown out in winter. And here it will be necessary to give another caution of some moment to the planter. Moor earth, consisting of loose and uncorrupted vegetable fibres, becomes soon dry after planting, so that the nick made for the reception of a seedling plant frequently opens and exposes the root to the action of the sun. In such places the soil should be well stirred, and the plants put down very early in the spring, taking care to fix the earth as close to the roots as possible.

In some parts of Scotland, the seedling firs are put into the earth without any sort of preparation. A hole being bored through the heath with an iron instrument, made in the form of a large gimblet, the seedling is immediately introduced. By this management the soil is prevented from opening in hot weather to the prejudice of the young plant. Instead of being pointed, the instrument is flattened at the extremity, like a chissel with a nick in it, by which the plant is drawn down to the bottom of the hole made to receive it.

I have

I have already remarked, that under every circumstance of sowing or planting, especially the former, the utmost care must be taken to fence off the young plants, lest cattle and sheep should break in and render the pains of the planter abortive.

As ferns, and grasses of every kind, are great enemies to plants raised from seeds, the utmost care must be taken to keep the woods, during their infancy, as clear from them as possible. Tall fern will sometimes twine about sown oaks of two feet high, and bend them to the ground, to the utter destruction of the wood, unless properly noticed. However in poor land the fern is seldom possessed of such a destructive luxuriance. The expence of fencing and keeping the land clear from grass and weeds will be abundantly repaid in the increase and vigour of the wood, and should upon no account be dispensed with.

Under some particular circumstances, it may be proper to cover rocky and exposed situations with Oaks raised in a nursery. In such cases we should always plant from the seed bed; and in order to bring up the young Oaks, where the aspect and situation happen to be unfriendly, it should be recommended to skirt the wood, to a sufficient thickness, with Scotch firs, mixing some of them in the body of the wood. In this manner an exposed situation may be made to produce excellent timber; and when the trees are grown to a size sufficient for their own protection, the firs in the centre, which I call the purses, should be removed, otherwise they will injure the young Oaks.

Foster'd thus,

The cradled hero gains from female care
His future vigor; but, that vigor felt,
He springs indignant from his nurse's arms,
He nods the plumed crest, he shakes the spear,
And is that awful thing which heav'n ordain'd
The scourge of tyrants, and his country's pride.

MASON.

On the judicious thinning and cleaning a young wood, depends much of the planter's success and profit; on which account all gentlemen who engage deeply in planting will find it highly necessary to appoint proper persons, whose office shall be solely confined to the superintendence of the woods. From a neglect in this particular, the hopes of half a century may be thrown away in a period of a few years.

The method of seedling-planting comes nearest to the nature of sowing, and is generally connected with it in all large undertakings.

It

It often happens, from natural or accidental causes, that planted Oaks grow stunted and crooked; in such cases they should be cut down at a proper season. In consequence of this judicious practice, a clean leading shoot will be obtained that will soon overtake the cotemporary trees that have not undergone the same operation. But it must be considered that no Oak should be thus headed down till two or three years after planting, or until it has compleatly rooted itself in the ground. Many other kinds of forest-trees, under similar circumstances, may be treated in the same manner; but we must except all the pine tribe from this operation, as in them the loss of the leading shoot is the certain loss of the tree.

An opinion generally prevails, that good land should always be employed in meadow, pasture, and tillage, and that none but the barren and rocky soils should be planted. Such an idea is by no means founded on truth, as it may be demonstrated, that good land lying remote from a town, and near a navigable river or canal, will yield a better profit when planted, than if it had been employed in pasturage and tillage. There is, I confess, some difference, when we consider that in the one case the profits are annual and small, and in the other distant and large, which circumstance must materially affect the inclinations of some people; but a true patriot, and all planters are patriots, will forego the present profits, and rest satisfied with having handed down to posterity a blessing of inestimable value. Full of this idea, the patriot will set apart some good lands for the generous purpose of raising timber, which at some future periods may be employed in building ships for the advancement of our commerce and security of our island.

Let India boast her plants, nor envy we

The weeping amber and the balmy tree,

While by our oaks the precious loads are born,

And realms commanded which those trees adorn. POPE.

As a farther encouragement to the generous planter, it may be remarked that the best lands always produce the cleanest, quickest, and best growing timber; at the same time, the under-wood springs up with an amazing and profitable luxuriance. To such men the soil is always grateful.

When a large tract of land is designed for wood, especially if it be of an indifferent quality, it may be advantageous to attend to the following method, which was recommended to me by a gentleman long conversant in the practice of raising woods. But it must be observed, that this method can only be compiled with in places where the plow can be introduced.

Plow the whole in October or November, and in the following spring plow and harrow so as effectually to destroy the turf. The land being reduced to an excellent tilth, sow it with turnip-seed about the third week in June, and when the plants are sufficiently advanced let them be carefully hoed, which operation must be repeated at a proper interval. After this the crop, if possible, should be eaten upon the ground with sheep. Upon the same land another crop of turnips should be taken the succeeding year; after which the ground will be in clean and excellent condition for receiving the acorns and seeds of forest-trees. These should be committed to the earth in the following manner:

Early in the spring, upon one plowing, sow one bushel, or three pecks of oats, and at the same time sow the necessary quantity of acorns, chesnuts, ash-keys, beech-masts, fir-seeds, &c. After this let the whole be harrowed to cover the seeds. As in all extensive tracts there are a variety of soils, it will be most judicious to sow the different seeds upon such parts as are most suitable to their respective natures. Besides, some trees, though they delight in the same sort of soil, do not grow kindly together; so that the planter will do well to consider this, and only mix such together as are found, by general practice, to grow friendly to each other. And here I beg leave to remark, that where the turnips are cultivated in drills and well horse-hoed, the land will be in better condition for receiving the acorns, &c. than if the broad-cast method had been pursued.

In this manner an extensive wood may be raised at a small expence, as the turnip and oat crops will pay the expence of plowing, rent, and incidental charges. The tender plants being nourished, warmed, and protected by the oat stalks, will make vigorous shoots, and, having no weeds to struggle with the first summer, will push forward with amazing vigour. As the land sown in this manner will be fully stocked with plants, the feet of the reapers employed in cutting down the oats will not materially affect the seedling oaks, which before the autumn will have made a considerable progress. The firs, from the slowness of their growth, will be secure from injury, and the ashes cannot be hurt, as they do not vegetate till the second year. In some parts of Norfolk, where the land in general is of a sandy nature, with a bed of clay or marl underneath, it is recommended by the author of the above instructions, to raise an oak wood by sowing the acorns with a crop of spring rye; and I am well informed of the success of that method in one instance.—A wood raised in this natural manner will not only make the best timber for the uses of the carpenter

penter and ship-builder, but will arrive at maturity many years sooner than one of the same age raised from plants drawn from the nursery. The tap-root of all trees corresponds with the leading shoot; so that when it is cut off, as in planting from the nursery, the tree is weakened in its leading shoot, but puts out more vigorously in its lateral ones. An attention to the correspondence between the branches and roots solves many of the phenomena in pruning and planting.

A wood raised in this cheap and easy manner may be thinned at proper seasons, leaving the most thriving trees to stand for timber, or (which is the most profitable way) it may be converted into a spring wood, in which case no timber should be left standing, as the copse wood will be retarded in its growth by the over-dripping of the large trees. According to the goodness of the land, the spring wood will arrive sooner or later at maturity; and as the wood of that kind, is a regular and constant income, after a term of years, it become a very advantageous method of applying land in all countries where fuel is dear.

As much depends upon keeping the seedling plants clear from weeds, it might be an improvement to the plan, if, after the oats are harrowed in, drills were drawn with a light plow all over the field at the distance of four feet from each other. Into these let the acorns, chesnuts, and other seeds be sown, after which they may be covered with rakes; the thickness, however, of the covering, and the deepness of the drills, must be regulated by the nature of the soil and the seed sown. A wood raised in this manner may be cleaned at a small expence by horse-hoeing the intervals, and hand-hoeing and thinning the rows at proper seasons; for which necessary operations consult the directions already given for cleaning Oaks drawn from the nursery, and planted in rows.

The celebrated Marquis of Turbilly, speaking of woods raised from seeds, says, "Woods thus raised out-grow, even in a few years, those that have been planted at the same time, and cultivated by digging and dressing at a great expence. No trees are taller, straighter, and of a finer bark."

In this place I judge it necessary to remark, that the above directions are drawn from the most approved authors, as well as the private information of gentlemen well conversant in the practice of planting; but as all countries differ in a variety of circumstances, I wish to be understood as only laying down rules subject to a necessary variation. There is nothing so dangerous in planting as obeying too servilely the directions given in books: something must be left to the planter himself.

ART. III. *Observations on Whins or Furze used for Fencing.*

Extracted and abridged from ESSAYS ON AGRICULTURE.

WHINS, when sown on the top of banks for fences, come up quick and soon arrive at perfection. They will also grow on a soil not favourable to the plants with which we usually form Quick Hedges: but when planted in the common method they are neither a strong nor a lasting fence. The first of these defects may in some measure be prevented by making the bank on which they are sowed (for they never should be transplanted) of a very considerable breadth, in order that the plants may spread freely. The best method is to make your bank five or six feet in breadth at the top, with a large ditch on each side of it: sow the whole surface of the bank with whin seeds. These will come up speedily, and in two or three years will form a barrier that few animals will attempt to break through, and continue in that state of perfection for some years. But the greatest objection to this plant as a fence is, that, as it advances in size, the old prickles always die away, there being never more of them alive at any time upon the plant than those which were the produce of the preceding year; and these thus gradually falling away, leave the stems naked below as they advance in height.—By this means the fence not only becomes unsightly from the stems being bare, but so weak from their slenderness as not to make any resistance to animals that attempt to force them.

To remedy this great defect either of the two following methods may be adopted, as best suit your situation and circumstances.

The first is to take care always to keep up a succession of young plants on your bank; never allowing them to grow to such a height as to become bare below; and it is principally to admit of this, that I have advised the bank to be made of such an unusual breadth; for if one side of the fence be cut down quite close to the bank, when only two or three years old, the other half will remain as a fence till the side that is cut becomes strong again; and then the opposite side may be cut in its turn, and so on alternately, as long as you please. By these means the bank will always have a strong hedge upon it, without ever becoming naked at the root. And as the young shoots of this plant when bruised, is one of the most valuable kinds of winter food yet known for most kinds of domestic animals, the tops may be carried home, and employed for that purpose by the farmer. This will abundantly compensate for

the trouble of cutting, and the waste of ground that is occasioned by the breadth of the bank.

The other method of preserving a hedge of whins from turning open below, can only be practised where sheep are kept; but may be there employed with the greatest propriety. In this case it will be proper to sow your seeds upon a conical bank of earth, without any ditches on either side. In sandy soils, when whins are near to afford seed, these are the very best fences that can be made, more especially in open countries where white-thorns are hard to procure.

If the whins are preserved from the sheep for two or three years after planting, they may then have free access to the hedge, and will eat up all the young shoots they can reach; this will occasion a great number of fresh side shoots to be put forth; and these being continually browsed upon, will soon become as close as you desire them, even as close as a clipt yew hedge, and are in no danger of becoming naked at the root, although the middle part should advance to a considerable height. The reader ought, however, to be apprized of one very great inconvenience that attends these hedges; viz. that the seeds are blown by the winds into the fields, and come up in such abundance as to become a great nuisance, to corn lands especially; and it is almost impossible to extirpate them when they are once established.

ART. IV. *Directions concerning the feeding of Horses in the House, and the Exercise proper for them.*

THE Horse is so noble and useful an animal, that every information which can tend to his good management may be rendered serviceable to the community; we shall therefore endeavour to select what is most valuable from the directions of writers, and the experience of others, relative to the feeding of horses in the house, and properly exercising them, and present it to our readers in this essay.

Such is the diversity in horses' appetites, and powers of digestion, that the exact quantity of hay and corn which it is necessary to allow them, can only be ascertained by experience. Some are better feeders than others, and at the same time require more food. Other great feeders must be stinted in their diet, particularly when it produces bad blood, fills them with humours, or endangers their wind. It ought always to be a constant rule to feed horses in proportion to the work and services required of them; and therefore, all hunters, coach-horses,

horses, and those that are much on the road, or work hard in any kind of drudgery, should be well fed; otherwise it is impossible they should go through their work to their owners satisfaction.

When a horse mangles and leaves his hay, and yet discovers no manifest signs of sickness, it is generally owing either to his having had too much given him, or too much corn, which makes some horses loath their hay; therefore, when this is the case, let his corn be abridged without increasing the quantity of hay, till he recovers his appetite, otherwise he will so far fall off his stomach that he will lose his belly, and look miserably: Nothing then will recover him but grass, or some other change of diet.

Young horses who have strong appetites, and have not done growing, should be indulged more in their feeding than those arrived at full maturity, and if their exercise be but little, lay some sweet straw before them often; for a young horse that has a craving appetite is never easy at an empty rack, but will always be in some mischief; either entangling himself in his halter, kicking against his stall; or nibbling the rack and manger, or turn a crib-biter. This seldom happens but to horses that stand idle while breeding their teeth; working is the best thing to prevent it, but where horses have but little work, which is often the case with troopers horses and some coach-horses, we advise them to have a little fresh straw constantly in their racks, and sometimes to be strapp'd back to keep them from this trick, which without some means of prevention will grow into an incurable habit.

Exercise, duly given to horses that are well fed, is not only the best means of preventing ill habits, but of preserving them in health. Exercise converts the food into good and wholesome nourishment, promotes circulation and all the glandular secretions, to enliven the body and make way for fresh supplies of food. It also invigorates the spirits, gives strength and firmness to the muscles and sinews, and enables the horse to endure labour. When exercise is given abroad, in a free air, it adds greatly to a horse's vigour, and prevents any putrid * co-hælion in the blood, which a close stagnated air may be apt to produce, especially when horses are young and their appetites strong: When they grow old, their appetites are more moderate, and rest is more agreeable to them than labour. Nevertheless exercise is necessary for both young and old; for old horses when they lie still become subject to infirmities, their blood

* Putridity dissolves the blood.

blood grows poor and languid, their bellies and sheaths swell, eruptions break out on their skins, and they have many dropfical symptoms, for which exercise is the best remedy.

We have already observed, that a horse's food ought to be proportioned to his exercise: The time and manner of his exercise ought also to be regarded; for if a horse is worked either at an unseasonable time, or beyond his strength, it will be more injurious to him, than if he had not been worked at all.

Therefore this general caution is always needful, viz. Never to ride a horse hard, or put him on any violent exercise when he has been newly fed, or has a belly full of meat or water. He should then be rode gently, and he will naturally mend his pace as his food and water begin to assuage. When a man has travelled hard upon a journey, or when horses have been driven hard in a carriage, it is not sufficient when they come to their journey's end, to walk them about in hand for half an hour, as is usually done, but their pace should be slackened a mile or two before they get home; and after that they should also be walked about some time, that they may cool gradually before they are brought into the stable. This is the safest way with young horses that have been kept well, and worked but little; and when such horses come late to the end of their day's journey, or the weather too bad to walk them in hand; they should be well rubbed all over their bodies and limbs till they are cool, without taking off their saddles or harness, and then cloathed; for when the smallest blood vessels are full, as they must unavoidably be in all strong and especially long-continued exercise, and the blood extremely heated and its motion greatly increased, any sudden chill or damp will produce stoppages and obstructions, where the vessels are the most minute, or wherever there is the greatest relaxation; sometimes inwardly in the lungs, sometimes in the liver and kidneys, and sometimes in the stomach, guts, and other membranous parts; and this is usually followed with inward pain and inflammation, or with great dulness and heaviness, which often bring on some of the worst disorders; or if the limbs happen to be weak and relaxed, the blood and juices will soon drop down and stagnate there, so as to produce swellings and ulcerations troublesome to remove, especially in horses that have been but little used to such labour. Habit and use in continued exercise, indeed, alter the case, because such exercise strengthens and invigorates the nerves and sinews; this is evident in some hacknied or jobb horses, that scarce any thing will hurt them. Some of the jobb horses that we see perform so
much

much labour are naturally strong and very hardy, and have at first been carefully managed by their owners; therefore we see them generally begin and end their work gently.

Another caution necessary for the preservation of our horses, is, never to feed them too soon after they have been heated with exercise:—As to water, we hope few are so ignorant or imprudent as to give them any while they are very hot. Some persons carry this to an extreme, and though they travel gently, and are several hours on the road, will never suffer their horses to cool their mouths though ever so parched and dry; but this is a great error, because horses that travel or work but gently, may be indulged with water at any convenient place, and often suffer for the want of it. But with respect to feeding horses when they are hot, it should be considered that the blood vessels of the stomach are then replete and full, and oftentimes heated and inflamed; and it requires some time before a horse is in a capacity to receive food without being injured by it.

Men of weak digestions experience something of this in themselves: When over heated, they have no inclination to eat untill they grow cool; and if they happen to eat before, they are the worse for it. It is the same with horses, although in some much more so than in others.

Therefore in such cases let them have only a little clean hay given by hand till they are perfectly cool: If they are to travel again the same day, let their feeds be small, and at night a full feed given at twice, which then will not hurt them.

The method often used in feeding coach-horses upon the road by giving them bran with a few beans before their oats, is not at all amiss; because their work makes them perspire so much that without something of this kind they would be faint, or apt to grow costive in long journies, which would be bad for them. The bran keeps their bodies open, and the beans are enough of a binding quality to prevent the bran from scouring, which horses of weak bowels are apt to be subject to on a journey, and this complaint is no less injurious than costiveness. Care should however be taken that the bran is fresh, and the beans old, for nothing surfeits more than musty bran and new beans: neither should the beans be given too liberally, but only as a correcter of the bran, to render it less slippery.

Horses that have not been much accustomed to labour should be innured to it gradually: this caution is the more necessary because when they have had but little exercise, they are apt to increase in flesh though their feeding be but moderate, yet their flesh is loose and flabby; and if in this condition, while

his

his vessels are relaxed, a horse should be hard worked, it would be the more dangerous, because the blood at that time must have acquired such a degree of viscosity as to render it unfit to pass through the small tubes, which in this case must be greatly distended, and lay the foundation for many obstinate distempers.

When horses in this condition have blood taken from them, it is generally of such a texture and complexion as shews their dangerous state; consisting chiefly of a yellow viscid size, or else being of a florid high colour, very thick, without a due proportion of serum: And sometimes it will be black and grumy, which, upon sudden brisk exercise, brings on fevers with much inward pain and inflammation, and, unless great care be used, will end in putrefaction.

We will here further observe, that the longer any horse has been idle, the more time should be allowed to prepare him for hard labour; because the longer he has been kept in indolence his vessels become the more relaxed; the springiness and tone of the muscles the more debilitated and weakened; so that if he escapes a fever, or any acute distemper, yet sudden exercise in such a state is attended with much pain and weariness in the hips, shoulders, and limbs, and other parts adapted to motion.

[*To be continued.*]

For the FARMER'S MAGAZINE.

ART.V. *Useful Tables for raising and purchasing Annuities, &c.*

TABLE I.

THIS Table is intended to shew in what time an annual deposit of Money will accumulate a sufficiency to purchase an Annuity to commence at any period from 1 to 99 years distant from the time of beginning the annual payments. The first column has the Years; the second the Progressive Number of Dividends due at any period upon payments annually made; the third column marks the Interest at 4 per cent. or number of 25th parts with their fractions, contained in the sums so annually paid, at any period required; the last column has at top a table of 25th parts of 1l.; and at bottom a Table of Interest from One Farthing to Nine-pence Farthing when the 1l. table takes place. The uses of these two tables will be obvious to such as are disposed to calculate what is due for compound interest, as also double and treble compound interest,

as low as a farthing, and this in a familiar way without the aid of decimals, and with *almost* equal exactness.

25th parts of 1l. or interest at 4 per cent. on 25th parts of 1l.											
25th parts, of interest given	Progressive Numbers.	Years.	25th parts, of interest given	Progressive Numbers.	Years.	25th parts, of interest given	Progressive Numbers.	Years.	25th parts, of interest given	Progressive Numbers.	Years.
1	34	1	20	67	2	34	101	3	38	104	4
2	68	2	40	101	4	72	135	5	42	107	5
3	102	3	50	135	5	106	166	6	46	109	6
4	136	4	60	166	6	140	197	7	50	112	7
5	170	5	70	197	7	174	228	8	54	114	8
6	204	6	80	228	8	208	259	9	58	116	9
7	238	7	90	259	9	242	290	10	62	118	10
8	272	8	100	290	10	276	321	11	66	120	11
9	306	9	110	321	11	310	352	12	70	122	12
10	340	10	120	352	12	344	383	13	74	124	13
11	374	11	130	383	13	378	414	14	78	126	14
12	408	12	140	414	14	412	445	15	82	128	15
13	442	13	150	445	15	446	476	16	86	130	16
14	476	14	160	476	16	480	507	17	90	132	17
15	510	15	170	507	17	514	538	18	94	134	18
16	544	16	180	538	18	548	569	19	98	136	19
17	578	17	190	569	19	582	600	20	102	138	20
18	612	18	200	600	20	616	631	21	106	140	21
19	646	19	210	631	21	650	662	22	110	142	22
20	680	20	220	662	22	684	693	23	114	144	23
21	714	21	230	693	23	718	724	24	118	146	24
22	748	22	240	724	24	752	755	25	122	148	25
23	782	23	250	755	25	786	786	26	126	150	26
24	816	24	260	786	26	820	817	27	130	152	27
25	850	25	270	817	27	854	848	28	134	154	28
26	884	26	280	848	28	888	879	29	138	156	29
27	918	27	290	879	29	922	910	30	142	158	30
28	952	28	300	910	30	956	941	31	146	160	31
29	986	29	310	941	31	990	972	32	150	162	32
30	1020	30	320	972	32	1024	1003	33	154	164	33
31	1054	31	330	1003	33	1058	1034	34	158	166	34
32	1088	32	340	1034	34	1092	1065	35	162	168	35
33	1122	33	350	1065	35	1126	1096	36	166	170	36
34	1156	34	360	1096	36	1160	1127	37	170	172	37
35	1190	35	370	1127	37	1194	1158	38	174	174	38
36	1224	36	380	1158	38	1228	1189	39	178	176	39
37	1258	37	390	1189	39	1262	1220	40	182	178	40
38	1292	38	400	1220	40	1296	1251	41	186	180	41
39	1326	39	410	1251	41	1330	1282	42	190	182	42
40	1360	40	420	1282	42	1364	1313	43	194	184	43
41	1394	41	430	1313	43	1398	1344	44	198	186	44
42	1428	42	440	1344	44	1432	1375	45	202	188	45
43	1462	43	450	1375	45	1466	1406	46	206	190	46
44	1496	44	460	1406	46	1500	1437	47	210	192	47
45	1530	45	470	1437	47	1534	1468	48	214	194	48
46	1564	46	480	1468	48	1568	1499	49	218	196	49
47	1598	47	490	1499	49	1602	1530	50	222	198	50
48	1632	48	500	1530	50	1636	1561	51	226	200	51
49	1666	49	510	1561	51	1670	1592	52	230	202	52
50	1700	50	520	1592	52	1704	1623	53	234	204	53
51	1734	51	530	1623	53	1738	1654	54	238	206	54
52	1768	52	540	1654	54	1772	1685	55	242	208	55
53	1802	53	550	1685	55	1806	1716	56	246	210	56
54	1836	54	560	1716	56	1840	1747	57	250	212	57
55	1870	55	570	1747	57	1874	1778	58	254	214	58
56	1904	56	580	1778	58	1908	1809	59	258	216	59
57	1938	57	590	1809	59	1942	1840	60	262	218	60
58	1972	58	600	1840	60	1976	1871	61	266	220	61
59	2006	59	610	1871	61	2010	1902	62	270	222	62
60	2040	60	620	1902	62	2044	1933	63	274	224	63
61	2074	61	630	1933	63	2078	1964	64	278	226	64
62	2108	62	640	1964	64	2112	1995	65	282	228	65
63	2142	63	650	1995	65	2146	2026	66	286	230	66
64	2176	64	660	2026	66	2180	2057	67	290	232	67
65	2210	65	670	2057	67	2214	2088	68	294	234	68
66	2244	66	680	2088	68	2248	2119	69	298	236	69
67	2278	67	690	2119	69	2282	2150	70	302	238	70
68	2312	68	700	2150	70	2316	2181	71	306	240	71
69	2346	69	710	2181	71	2350	2212	72	310	242	72
70	2380	70	720	2212	72	2384	2243	73	314	244	73
71	2414	71	730	2243	73	2418	2274	74	318	246	74
72	2448	72	740	2274	74	2452	2305	75	322	248	75
73	2482	73	750	2305	75	2486	2336	76	326	250	76
74	2516	74	760	2336	76	2520	2367	77	330	252	77
75	2550	75	770	2367	77	2554	2398	78	334	254	78
76	2584	76	780	2398	78	2588	2429	79	338	256	79
77	2618	77	790	2429	79	2622	2460	80	342	258	80
78	2652	78	800	2460	80	2656	2491	81	346	260	81
79	2686	79	810	2491	81	2690	2522	82	350	262	82
80	2720	80	820	2522	82	2724	2553	83	354	264	83
81	2754	81	830	2553	83	2758	2584	84	358	266	84
82	2788	82	840	2584	84	2792	2615	85	362	268	85
83	2822	83	850	2615	85	2826	2646	86	366	270	86
84	2856	84	860	2646	86	2860	2677	87	370	272	87
85	2890	85	870	2677	87	2894	2708	88	374	274	88
86	2924	86	880	2708	88	2928	2739	89	378	276	89
87	2958	87	890	2739	89	2962	2770	90	382	278	90
88	2992	88	900	2770	90	2996	2801	91	386	280	91
89	3026	89	910	2801	91	3030	2832	92	390	282	92
90	3060	90	920	2832	92	3064	2863	93	394	284	93
91	3094	91	930	2863	93	3098	2894	94	398	286	94
92	3128	92	940	2894	94	3132	2925	95	402	288	95
93	3162	93	950	2925	95	3166	2956	96	406	290	96
94	3196	94	960	2956	96	3200	2987	97	410	292	97
95	3230	95	970	2987	97	3234	3018	98	414	294	98
96	3264	96	980	3018	98	3268	3049	99	418	296	99
97	3298	97	990	3049	99	3302	3080	100	422	298	100
98	3332	98	1000	3080	100	3336	3111		426	300	
99	3366	99		3111		3370	3142		430	302	
100	3400	100		3142		3404	3173		434	304	
				3173		3438	3204		438	306	
				3204		3472	3235		442	308	
				3235		3506	3266		446	310	
				3266		3540	3297		450	312	
				3297		3574	3328		454	314	
				3328		3608	3359		458	316	
				3359		3642	3390		462	318	
				3390		3676	3421		466	320	
				3421		3710	3452		470	322	
				3452		3744	3483		474	324	
				3483		3778	3514		478	326	
				3514		3812	3545		482	328	
				3545		3846	3576		486	330	
				3576		3880	3607		490	332	
				3607		3914	3638		494	334	
				3638		3948	3669		498	336	
				3669		3982	3700		502	338	
				3700		4016	3731		506	340	
				3731		4050	3762		510	342	
				3762		4084	3793		514	344	
				3793		4118	3824		518	346	
				3824		4152	3855		522	348	
				3855		4186	3886		526	350	
				3886		4220	3917		530	352	
				3917		4254	3948		534	354	
				3948		4288	3979		538	356	
				3979		4322	4010		542	358	
				4010		4356	4041		546	360	
				4041		4390	4072		550	362	
				4072		4424	4103		554	364	
				4103		4458	4134		558	366	
				4134		4492	4165		562	368	
				4165		4526	4196		566	370	
				4196		4560	4227		570		

The

The more fully to explain this first table, let it be observed, that the first column contains the Years; the second, Progressive Numbers or Dividends in any given time from 1 to 99 years; for example: If I make a payment of 1*l.* for instance, annually, I know that the interest of 1*l.* only is due the first year; but making a second payment of 1*l.* at the commencement of the second year, and so continuing this payment yearly; I know also that the interest of 1*l.* has been due the first year, and now having added another 1*l.* the interest of 3*l.* becomes due at the end of two years; a third 1*l.* paid at the beginning of the 3*d.* year makes at the close of this year the interest of 6*l.* due; at the end of four years 10*l.*; of five years 15*l.*; and so in regular gradation according to the table; so that at the end of 99 years 1*l.* paid annually, will have given interest upon a sum equal to 4950*l.* If then, I want to know how much interest has been due to any determinate time, I can instantly find this, (*e. g.*) I find that 28 dividends, upon whatever has been the sum annually advanced, are due at the end of seven years; 55 at the end of ten years; 210 at the end of twenty years, and so on. By this easy method is seen, what any given sum paid yearly in advance will yield towards the purchase of an annuity to commence at any fixed period, from 1 to 99 years distant from the time of beginning the annual payments.

This calculation is made for 4 per cent. interest, but is easily adapted to any interest, by estimating the numerical proportion the interest bears to the principal, according to your agreement with the grantor of the annuity; for example: I know 4 per cent. is a 25*th* part of the principal advanced; 5 per cent. a 20*th* part, and so on. Now if I want to know what an annual payment of 1*l.* will give in aid of an annuity to commence at the end of 14 years, looking in the 1*st* column for 14 years, I see against it in the 2*d* column 105; the 3*d* column then informs me that this 105 contains 4 times 25, and 5 25*ths*, or 1 5*th* of a 25*th*, or, which is precisely the same thing, 41 for the 4 25*ths* contained in the 105, and 45 for the 5 25*ths*, so much having been given in simple interest in the space of 14 years from a yearly payment of 1*l.* to which should be added a 25*th* part of this simple interest, amounting to about 3*s.* 4½*d.* being the compound interest, the double compound interest, or 25*th* part of which is nearly 1½*d.* so that by thus taking a 25*th* part of the interest last given, the double or treble compound interest is found and carried to the gross sum: But in the early periods of the commencement of an annuity the double and treble compound interest (unless the sum advanced, and consequent annuity, is large,) will be inconsiderable, for it is seen if an annuity is bought to commence at the distance of 43 years, and make the yearly payment 1*l.* the compound interest, even in so long a space, would be only 1*l.* 10*s.* 3*d.* which giving a 25*th* part as double compound interest would be 1*s.* 2½*d.* the treble compound interest of which would be somewhat more than a 0½*d.* This however multiplied by 10, 20, 50, or 100, would become an object worthy attention.

Another necessary observation is, that the value of the annuity, if purchased on a life, and not for time, should be reckoned according to the probable expectation of life at the time the annuity is to commence: for instance, if subscribing for an annuity, and taking for my nominee a child whose probable expectation of life is rated at 26½ years, I wish the annuity to commence when my nominee is arrived at 25 years of age, I do not take the probable expectation of life, from the time of beginning my payments, but from that time in which my annuity is to commence, and make these my payments in such proportion, as that there shall be a sufficiency accumulated in principal and interest to make good my purchase, according to the fair valuation, by the time my annuity is to commence, with some little surplus for the grantor's trouble.

The probable expectations of life, and the chances of their falling, in the intermediate space from beginning the payments and commencement of the annuity purchased in this manner, may be traced out with very little trouble by the subsequent table.

SECOND TABLE.

THE following Table takes in upwards of Three Thousand Three Hundred Persons, tracing their decrease from their birth to their extinction. It is composed of 1000 persons at London, 1185 persons at Norwich, and 1149 at Northampton, all run into one number, the decrements of which number have been as follows in the third column; in the fourth column the probable chance of living is marked; and in the 5th the number of years purchase required for an annuity, to enable the seller to pay it during the probable expectation of the life it is bought upon, without loss to himself: And which of course is the true value of the annuity.

Ages..	Persons living.	Decrease of life.	Chances of living.	chance.	Purchase according to such chance.	Ages.	Persons living.	Decrease of life.	Chances of living.	chance.	Purch. ac. to such chance.
			years	yrs ms							
At birth	3334	940	5	4 9	48	762	21	17½	12	5	
1 year	2394	420	26½	16 3	49	741	22	17	12	2	
2	1974	161	35½	18 8	50	719	22	16½	11	10	
3	1813	85	38	19 4	51	697	21	16	11	8	
4	1728	61	39½	19 8	52	676	21	15½	11	5	
5	1667	48	39½	19 8	53	655	22	15	11	2	
6	1619	39	40	19 10	54	633	22	14½	10	11	
7	1580	31	39½	19 8	55	611	22	14	10	8	
8	1549	27	39½	19 8	56	589	22	13½	10	4	
9	1522	21	39	19 7	57	567	22	13	10	0	
10	1501	16	38½	19 6	58	545	21	12½	9	8	
11	1483	17	38	19 4	59	524	21	12	9	5	
12	1466	16	37	19 2	60	503	21	11½	9	1	
13	1450	15	37	19 2	61	482	21	11	8	9	
14	1435	15	36	18 10	62	461	22	10½	8	5	
15	1420	15	35½	18 8	63	439	22	10	8	2	
16	1405	15	35	18 7	64	417	22	10	8	0	
17	1390	15	34	18 5	65	395	22	9½	7	7	
18	1375	16	33½	18 3	66	373	22	9	7	4	
19	1359	17	33	18 1	67	351	22	8½	6	11	
20	1342	19	32	17 10	68	329	21	8	6	8	
21	1323	19	32	17 10	69	308	21	8	6	7	
22	1304	19	31	17 8	70	287	21	7½	6	5	
23	1284	20	30½	17 5	71	266	20	7	6	1	
24	1264	20	30	17 3	72	246	20	6½	5	6	
25	1244	20	29½	17 1	73	226	19	6	5	3	
26	1224	21	29	16 10	74	207	19	6	5	3	
27	1203	21	28½	16 8	75	188	19	6	5	3	
28	1182	22	28	16 7	76	169	18	5½	4	11	
29	1160	22	27½	16 6	77	151	17	5	4	9	
30	1140	20	27	16 4	78	134	15	5	4	9	
31	1120	20	26½	16 2	79	119	14	4	3	10	
32	1100	20	26	16 0	80	105	14	4	3	10	
33	1080	20	25	15 10	81	91	13	3½	3	8	
34	1060	20	25	15 10	82	78	13	3	2	11	
35	1040	20	24	15 5	83	65	12	3	2	11	
36	1020	20	23½	15 1	84	53	11	3	2	11	
37	1000	20	23	14 10	85	42	10	2	1	11	
38	980	21	22½	14 7	86	32	8	2	1	11	
39	959	22	22	14 5	87	24	6	2	1	11	
40	937	21	21½	14 3	88	18	5	2	1	11	
41	916	22	21	13 11	89	13	4	1½	1	5	
42	894	22	20½	13 9	90	9	4	1	0	11	
43	872	22	20	13 7	91	5	3	1	0	11	
44	850	22	19½	13 5	92	2	1	1	0	11	
45	828	22	19	13 2	93	1	1	0	0	6	
46	806	22	18½	12 11	94	0	0	0	0	0	
47	784	22	18	12 8							

The title of the second table explains in good measure its uses: And as it comprises a considerable number of persons from town and country, it may be presumed pretty exactly to have ascertained the probable expectations of life in a mixed society. It is seen to exceed Dr. Price's calculations, but it is judged his are taken from the decrease of life in London and Westminster.

The first, second, and third columns require nothing to be said of them; in the fourth column is shewn the probable chance of life, and in the 5th is seen the number of years purchase required to buy an annuity during the expected term of life. But this table is intended for the further purpose of ascertaining the value of an annuity purchased by advanced payments, to commence at a stated distant period; for we see by it, not only what an immediate annuity is worth, but also what ought to be allowed for the probability of the nominee on whose life the annuity hinges, falling, before it takes place; so that if I want to buy an annuity by this mode, I learn its value at the time it should commence, (e. g.) If I wish to purchase an annuity on the life of a child of three years old, to commence at 25 years of age, the table informs me it is an even chance that a person arrived at 25 lives to $54\frac{1}{2}$, that is, $29\frac{1}{2}$ years from the 25th year, (Dr. Price makes it only 26 years and 1 month;) to purchase an immediate annuity for this term upwards of 17 years purchase is required; if we call it 17l. 10s. (which is $17\frac{1}{2}$ years) for every 20s. annuity, let us see what is the probability, in a protracted annuity, of the nominee's dying before the annuity is claimable: here then we are shewn that of 1813 persons living at three years old, 1244 remain alive at 25 years, 569 having died, which is somewhat more than $\frac{3}{14}$ ths of the 1813. To familiarise this, suppose 14l. required to purchase an immediate annuity of 1l. at 25 years of age; in a purchase made by annual payments, at the risque of the nominee's dropping, to commence at a distant period; an allowance of three parts or pounds out of 14l. should be made for the probable expectation of the nominee's dying before the annuity would become claimable: Hence the annual payments should be so proportioned, as that 11l. not 14l. should be accumulated by principal and interest by the time my nominee arrives at 25 years of age: And in like manner an annuity to commence at any given period may be calculated.

By this method, an Annuity Society, highly useful to the community, might be firmly and equitably established. Those held out to the public a few years ago, were hastily formed, and crudely digested; and this, and not a dislike to the institutions themselves, for they were much approved, was the reason of their failure, and happy it was, that the ingenious Dr. Price early pointed out their insufficiency to answer the ends proposed.

If clubs or societies for providing against old age and infirmities, were to be modelled according to this plan, their well-intended schemes would be put upon a more certain and permanent establishment, than generally they are.

It is the wish of the compiler of these two tables, to see a third formed from them, by some clearer and abler head, to shew what ought to be deducted for the probability of lives falling, in the intermediate space of time, from beginning the payments to that of the desired commencement of the annuity. Such a table would perfect (as far as the nature of the thing will admit) an useful and safe annuity scheme. The compiler of these tables acknowledges himself, much a favourer of such a provident care of, and attention to old age and infirmities, as well as to our offspring, and many others whom we might wish to make some provision for, suited to their and our own stations in life: And the way being, he flatters himself, chalked out by these tables, a little application only is required, by persons conversant in these matters, to form one from them. And it is sincerely wished it may induce some persons of real property and probity, to regard this hint.

It seems necessary, (as it is but just touched upon above) to remark, that the chances of life in this table are made greater than in general they are thought to be; but they so appear in following, in regular order, the decrements of a considerable number taken from three different places, and run into one number; and supposing the date of life not quite so long as here estimated, it is better

ter to err a little on this hand, than find your fund insufficient to answer its intended purposes; it is safer to have a little surplus, than be deficient.

We will conclude with this one further observation, viz. That our aim having been to set our estimates, and speak in language to be easily and generally understood, we have avoided decimals and fractions, as far as possible, where there was danger of confusing the ideas of the reader. In naming therefore the years and months purchase of the annuities, conformably to pre-supposed terms of the lives, we do not pretend to have been so exact as to bring this to days or weeks, (a matter of very little consequence in purchases of this sort) but we can venture to say, we have not erred a quarter of a year in any instance; and still further to have in view security to the annuitants, have purposely given the advantage in almost every instance, where exactness could not readily be had, on the side of the grantor, where it ought to be given for obvious reasons.

ART. IV. *Observations on the Norfolk Husbandry.*

[Extracted and abridged from Mr. Arthur Young's Tour through Norfolk, in the year 1770.]

IT will not be improper, before I leave this county, to give my readers a review of the husbandry which has rendered the name of it so justly famous in the farming world. Pointing out the practices which have succeeded so nobly here, may, if properly attended to, be of use to other countries possessed of the same advantages, but at present unknowing in the art to use them.

From forty to sixty years ago, all the northern and western, and a part of the eastern tracts of this (now very opulent) county were sheep-walks, let as low as from six-pence to eighteen-pence and two shillings an acre. Much of it was in this condition thirty years ago. The great improvements have been made by means of the following circumstances.

First, by inclosing without assistance of parliament.

2dly, by a spirited use of marle and clay.

3dly, by the introduction of an excellent course of crops.

4thly, by the culture of turnips well hand-hoed.

5thly, by the culture of clover and ray-grass.

6thly, by landlords granting long leases.

7thly, by the country being divided chiefly into large farms.

In this recapitulation I have inserted no article that is included in another. Take any one from the seven, and the improvements in it would never have existed. The great importance of them all will appear sufficiently evident from a short examination. And First,

Of the INCLOSURE.

Provided open lands are inclosed, it is not of very great consequence by what means it was effected; but the fact is, that

that parliamentary inclosures are scarcely ever so complete and general as those in Norfolk. Had the inclosure of this county been by acts of parliament, much might have been done, but on no comparison with what is done. The great difficulty and attention then would have been to inclose: now the works of improvement enjoy the immediate attention. And undoubtedly many of the finest loams on the richest marles would at this day have been sheep-walks, had there been any right of commonage on them. A parliamentary inclosure is also (through the knavery of commissioners and attorneys) so very expensive, compared with a private one, that it would have damped the succeeding undertakings, in taking up too large a portion of the money requisite for the great work, in a mere preparation for it.

MARLING.

It is the great advantage of the sandy part of this county, that, dig where you will, you find an exceeding white marle or clay. The marle is generally white, with veins of yellow and red; sometimes it is only tinged with those colours. If dropped in fair water, it falls, and bubbles to the top: If it is very good it has an effervescence. When dropt into vinegar in a lump, it will sometimes make the glass, though but half full, boil over in a froth. The clay has none of these qualities. The best marle is that which falls the quickest in water.

I have not met with any persons that have been curious enough to form a series of small experiments on marle for the discovery of the proper quantities for use, in proportion to the given qualities of it. The farmers, on the first use of marle spread it in larger quantities than others have done since: one hundred loads on an acre were common, and few used less than eighty. But land is now marled for the first time in some places with not more than from forty to sixty loads. The reason given me for this change, was principally a view to future marlings: If eighty or one hundred loads are laid on at first, they do not think a repetition of twenty or thirty, at the end of twenty-five years, will answer so well as if the first quantity had been smaller. Therefore, when the first manuring is wearing out pretty fast, which generally happens in about twenty years, they (on the renewal of their lease) replenish the ground with an addition of from twenty to thirty loads per acre more. And several tracts of this county have been marled with great success the third time.

But it is not the marle or clay alone that has worked the
great

great effects we have seen in Norfolk: It must be spread on a suitable soil: This is a light sandy loam, or loamy sand; not a dead sand alone; in some places a gravelly loam, but not a gravel.

Some tracts of pure sand have been marled and with success, though not so great: but clay, from its superior tenacity, is reckoned better for them than marle.

The reader is not, however, to suppose that the Norfolk farmers have depended on these manures alone; on the contrary, they have been very attentive to others. Folding sheep, as well in winter as in summer, is no where more practised or better understood. Winter fattening beasts on turnips in the farm yards; confining the cows to those yards; and keeping in them very large stocks of swine, convert their great plenty of straw into manure, which they make the best use of.

Oil cake they lay on their wheat at the expence of two guineas an acre. All these manures they use to far greater profit than if their land had not been marled. That foundation of their husbandry is a preparative to all succeeding manurings, which take the greater effect from following an absorbent earth.

THE COURSE OF CROPS.

After the best managed inclosure, and the most spirited conduct in marling, still the success of the undertaking depends on this point. No fortune will be made in Norfolk by farming, unless a judicious course of crops be pursued. That which has been chiefly adopted by the Norfolk farmers is, first, turnips; second, barley; third, clover, or clover and ray-grass; fourth, wheat. Some of them, depending on the richness of their soils, will steal a crop of pease, or barley, after the wheat, but it is bad husbandry, and has not been followed by those among them who have made the greatest fortunes.

In the above course the turneps are (if possible) manured for, and much of the wheat the same. This is a noble system, which keeps the soil rich; the only one exhausting crop is taken to a cleansing and a meliorating one—Under such management the land cannot be either poor or foul.

The only variations are in the duration of the clover; which extends from one year to three or four. On the first improvement ray-grass was sown with it; and it was left on the ground three or four years; but latterly they sow no more ray-grass than is merely sufficient for their flocks, and leave it two years on the ground.

The

The rest of their clover crop is sown alone, and left but one year. Opinions are not clear on these variations; some think the modern method an improvement; others that the old one is better.

If I may be allowed to hazard an idea on this point, I should venture to condemn the ploughing up of the clover the first year, and for these reasons: It is exhausting the land more; two crops of corn in four years exhaust much more than two in five years: Hence appears to me the modern necessity of buying oil-cake at two guineas an acre. The manure is lost sooner in this method, for that subsides in exact proportion to the quantity of tillage in a given time. It does not sink while the land is at rest; but while it is pulverizing by the plough. Lastly, the stock of cattle is less, consequently the quantity of dung inferior; instead of twenty-five only twenty acres are folded. They do not pretend that the wheat after a lay of two years is worse than after that of one, but they say it is not so clean. I admit that there will be more trouble in clearing the turnip fallow of twitch; but let that trouble be carried to account, and it will not balance the counter advantages. Besides, the best farmers agree, that if the turnip fallow is well executed, the plants twice well-hoed, and the land stirred thrice for barley; that then the clover, lying two years, will not give a foul crop of wheat. Twitch generally comes from neglect.

TURNIPS.

Every link of the chain of Norfolk husbandry has so intimate a connection and dependance, that the destruction of a single one ruins the whole. Every thing depends not only on turnips, but on turnips well hoed. This assertion will receive but little credit in divers parts of the kingdom; such is the ignorance and obstinacy of those who, wedded to the practice of their forefathers, seem averse to all improvement. But time will cure this evil. Turnips on well-manured land, thoroughly hoed, are the only fallow in the Norfolk course; it is therefore absolutely necessary to make it as complete as possible.

They cannot be changed for a mere fallow, because the stock of sheep, kept for folding and eating of the clover and ray-grass, and farm-yard cattle, would then all starve; and, add to this, that the tillage during the latter part of the summer, &c. which must be substituted in their stead, would pulverize the lands too much, which are greatly improved by the treading of the cattle that eat the crop off. In a word, the impro-

ved culture of turnips, which is here carried to its highest perfection, is so important to the Norfolk husbandry, that no other vegetable could be substituted that a common farmer would cultivate.

CLOVER and RAY-GRASS.

These are also articles which could not possibly be dispensed with. The light parts of the country have neither meadows nor pastures; their flocks of sheep, dairies of cows, their falling beasts in the spring, and their horses, all depend on these grasses, and could subsist by nothing else; nor could they raise any wheat without this assistance. Their soil is too light for that grain before it is well bound and matted together by the roots of the clover, which are at the same time a rich manure for the wheat. A fallow instead of clover would be worse than nothing, it would render the land much too light; for these reasons, which certainly are decisive, nothing could be done here without clover.

LEASES:

It is a custom growing pretty common in several parts of the kingdom, to grant no leases: This will do very well where no improvements are carried on, where a tenant can never lose any thing by being turned out of his farm: But it is absurdity itself to expect that a man will begin his husbandry on your land by expending three, four, or five pounds an acre while he is liable to be turned out at a year's notice.

I shall not take up more of your time on a point which is self-evident. Had the Norfolk landlords conducted themselves on such narrow principles, their estates, which are raised five, six, and even ten-fold, would still have been sheep-walks.

LARGE FARMS.

If the preceding articles are properly reviewed, it will at once be apparent that no small farmers could effect such great things as have been done in Norfolk. Inclosing, marling, and keeping a flock of sheep large enough for folding, belong absolutely and exclusively to great farmers. None of them could be effected by small ones, or such as are called middling ones in other counties.

The best husbandry in Norfolk is that carried on by the largest farmers. You must go to a Curtis, a Mallet, a Barton, a Glover, and a Carr, to see Norfolk husbandry in its highest state of perfection. You will not among them find the stolen crops that are too often met with among little occupiers of an hundred a year, in the eastern part of that county.

Great

Great farms have been the soul of the Norfolk culture: split them into tenures of an hundred a year, and husbandry would decline to its ancient state, some particular branches excepted. I shall now venture slightly to mention a few particulars in which the Norfolk farmers are deficient. First, pease are never hand-hoed. Secondly, wheat, though weedy, the same. Thirdly, beans the same every where except in marshland. Fourthly, no regular chopping of stubbles for littering farm yards. Fifthly, vast tracts of land admirably fit for carrots; but none cultivated except a few near Norwich.

These circumstances, however, are by no means a ballance for the merit of the excellent husbandry above stated: I hint them only as matters deserving the attention of men who have so far exceeded others in matters of the greatest importance.

ART. V. Directions for the Kitchen-Garden for September.

PREPARE your mushroom beds and plant the spawn. Plant out the lettuces sown last month for spring use under a south wall or other fence prepared for them, observing when you dig the ground to lay it sloping to the sun and to rake it smooth; take off the extremities of the roots, and remove all the dead leaves, plant in rows five or six inches distant from each other.

Sow some more lettuce seed of different sorts, the first, second, and third weeks of this month.

Plant out the cauliflower plants sown in August about the third week of this month.

In the first or second week transplant the last crop of brocoli to the place where they are to stand: transplant the cabbages sown last month.

Plant

Since the above account was written, the Norfolk Farmers are come generally into the practice of setting their wheat in rows or drills, and keep it quite clean by hoeing and weeding. The very great advantage they find herein, not only in the quantity of seed saved, and the extra quantity of grain produced on an acre, but also in the superior quality of the wheat that is thus planted to others, has induced all of them to set it, who can possibly get hands to do the work. This excellent practice is also making considerable progress in Suffolk, and we hope it will soon become general in spite of all the ill-judged prejudices that ignorant people entertain against it. The quantity they set is about one bushel per acre—never more; and their crops are far superior to those sown, where eight or nine pecks per acre are sown. [See Vol. I. page 64, of our magazine.]

Plant out coleworts sown in July, into the place where they are to remain.

About the middle of the month, plant out a large crop of celery for spring use, and keep the other celery, before entrenched, constantly earthed up in dry weather.

Tie up endive to blanch in dry weather, and in the beginning of the month pick out some endive plants for winter use, and about the middle and latter end plant some out for spring fallads.

Thin the spinach sown last month, and clear it from weeds. Hand weed the onions very carefully, and in the first week you may sow more seeds.

Sow small fallading once every week or ten days in a warm situation, and where the earth is rich and light. And, towards the end of this month, sow small fallad herbs in frames, and ver them with the lights occasionally.

Hang up phials of sugared or honied water to catch wasps and flies.—Hoe up weeds at every opportunity.

Cut box edgings, plant box, and clip hedges. Mow grass walks and lawns, and roll gravel walks.

[To be continued.]

ART. VI. A Description of Goosegrafs or Clivers.

[Recommended, in page 229, as a certain cure for the Scurvy, &c.]

THIS plant is in the southern counties called Clivers, in those of the north and west Hairiff, and in some others Robin-i'-th'-hedge, but is the same plant as is known in all by the name of Goose-grafs. The following description in its mature state must be understood by all, and its virtues as an antiscorbutic make it necessary that it should be generally known in this country:—

Goose-grafs is a slender plant, of a clean pale green colour, very frequently grows to the length of four or five feet, especially when it is confined within a hedge. The stem is four square, and nearly the same thickness from the bottom to the top. All along the stem, at the distance of three to five inches, (according to the strength of the plant) there grow six leaves of a slender oval shape, in the form of a star. From the center of these leaves arises a slender stalk, producing very small white flowers, which are succeeded by round seeds, the bigness of small pepper-corns. All over the plant, stem, leaves, and seeds, grow a multitude of stiff-hooked hairs, which

clasp

clasp to every thing they touch, and when the seeds are ripe, it is not possible to touch the plant with cloaths made of wool, be what they will, but the seeds will quit the stem, and adhere to the cloaths." As if the Supreme Donor of this invaluable plant would oblige mankind to notice it.

The season is now so far advanced, that succulent plants are scarce; but those who wish to make use of their juices so long as they can be obtained, are cautioned to have the plants brought home unpounded, because there are at this time some people exposing juices to sale which are expressed from a composition of plants and leaves of God knows what. Others, who have got the true plants, and make a merit of pounding and squeezing them before you, drench the plants in water, under a pretence of washing, or keeping them fresh, but in effect to increase, and consequently weaken the juices. In moderate weather three pounds of the plants yield one pint of juice; and, in moist weather, a larger dose should be taken than in dry.

For the FARMER'S MAGAZINE.

To the Gentlemen of the Counties of SOMERSET, GLOUCESTER, WILTS, and DORSET in general; and of the City of BATH in particular.

L E T T E R H.

GENTLEMEN,

IN last month's magazine, I took the liberty of laying before you a proposal for the establishment of a Society in Bath, for the encouragement of Agriculture, Manufactures, Commerce, and the Fine Arts; the benefits arising from which are principally intended to extend to the above-mentioned four counties.

Since the publication of that letter, I am happy to find the proposal has met with that general approbation which the nature and tendency of such honourable institutions merit, from men of liberal minds and well-informed judgements.

In a cause so laudable, I hope to be indulged in adding a few more observations, which seem naturally to arise from an investigation of the subject.

Confirmed in my own sentiments of the utility of the design, by the concurring testimony of many gentlemen, who have been pleased to communicate their thoughts upon it, I am now convinced beyond a doubt, that the institution of a Society for the above-named purposes will be easily and speedily effected.

A considerable list is already formed, of very respectable gentlemen, who have given in their names as subscribers, and who propose to honour the ensuing meeting with their presence. Among them are some of the highest rank, and of others as ingenious and learned, as perhaps any Society of this kind can boast.

Public-Spiritedness is one of the shining virtues that adorn this age, and distinguish this country. However the opinions of gentlemen may differ with regard to inferior concerns, they happily coincide, and give birth

birth to noble actions in matters wherein the good of community is concerned.

Of this uniform disposition to promote national happiness, and lay the foundation of its future glory, our public charities, associations, the regulation of our civil police, the different societies for the general propagation of knowledge and improvements in all the useful arts and sciences, bear the noblest and most honourable testimony. These are the fruits not only of a well-regulated civil polity, but of a genius and expansion of mind unknown in former ages, and distant countries. They not only reflect honour on the members which constitute them, but on the state. They not only promote the good of individuals, but of society at large. They not only benefit, essentially benefit, the present age, but the advantages resulting therefrom will doubtless confer both wealth and happiness on posterity. The names of those illustrious men who amidst the darkness of error held forth the light of truth, who excited the spirit of enquiry by their own example, who established the first certain principles of science and natural knowledge, and brought speculative reasoning to the test of accurate experiment, are uniformly held in the most honourable estimation.

It is the same with respect to all improvements in Agriculture, Mechanics, and the practical Arts. The authors of them are justly intitled to the thanks of their country. The military achievements of the hero, when blazoned by the trumpet of fame, become subjects of vulgar and superficial admiration: but how much more worthy of just and honourable praise and esteem are those men, who cultivate, improve, and fertilize a country, than those who deluge it with blood, and render it the seat of desolation. The mere "*whistling of a name*" is all that the former can expect—but the latter are entitled to lasting fame, and deserve to have statues erected to their memory.

In my former letter I observed, that "Agriculture, of all employments, merits our first and most serious attention;" not only as it is productive of the means by which every natural want, and even the elegancies of life are supplied, but also as it tends to furnish, directly or remotely, proper and useful employment for every class of the people. Whoever is conversant in the history of former ages, and of distant nations, or has attentively considered that of our own, will be convinced that they have become powerful, wealthy and happy, in proportion as agriculture flourished amongst them.

The spirit of cultivation excites industry and quickens diligence. A noble emulation glows in the breasts of individuals, when exertion is stimulated by honour, and success crowned with reward. Idleness is the parent of innumerable evils; and idleness will prevail where labour is not encouraged by an adequate reward. Inactivity, like a lethargy in the human frame, enervates a state and hastens its dissolution. By the encouragement of agriculture, manufactures and commerce are encouraged also. When the natural produce of the earth is increased, materials abound for the former, and the alluring prospect of wealth gives spirit to the latter.

Agriculture is the master spring of national vigor: if *that* is suspended, a universal stagnation must ensue—if its force is augmented, new life and activity will prevail through the whole machine of the state.

These brief remarks are not made from an apprehension that those whom I address are ignorant of the truths they are intended to convey; but from a wish to revive in their memory reflections tending to rouse the mind to vigilance and activity in the execution of great and noble designs:

As

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General Directions for the Drive

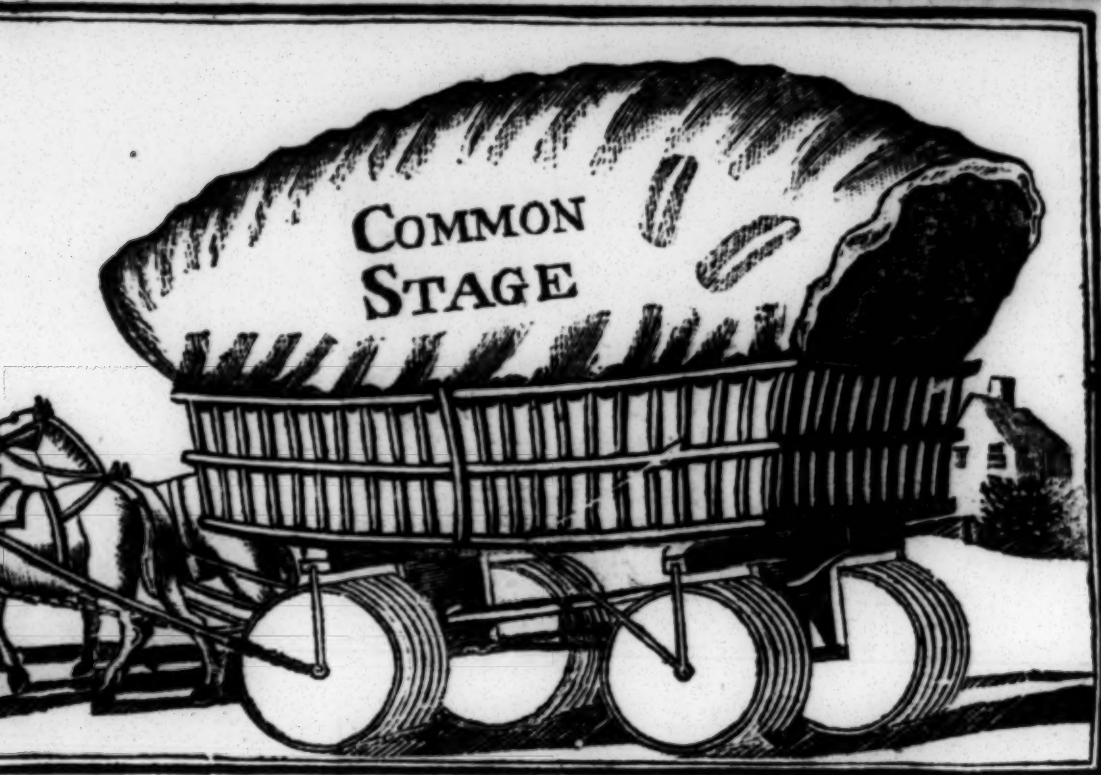
LET the Waggon be greased as often as you can. Be careful that you put on again, all the grease you can. Examine the Boxes often (lest they should get dry).

Hook up the Back Bands of the Thiller Horses upwards as much as possible, and let the Body Horses have Pads or Saddles on their Backs, to sustain the Load.

Load the Waggon heavy before, and leave the Load light behind.

These Precautions observed, every Owner will find his Horses last longer from the very first; for no Road or Country can be so bad as to make them last longer.

N. B. When Horses draw horizontally, they cannot exert more Power than what their Weight enables them to use; the Backband of the Horse to the Center of the fore Wheel, the more this in Proportion as the Size of the Wheel is diminished. The Body Horses, by their Abutment, will have the most Power, whilst the Leaders, by the Division of their Weight; but the Force of the whole Team together, the Body Horses bearing the Pressure of the Leaders, will support, and which besides, will be a material Advantage to the Owner, which he will obtain without it. See the Print above.



Driver of the Rolling Waggon.

As you conveniently can, whilst it is new.
 All the Rings or Washers to their proper Places,
 and get loose at first) and wedge them up tight.
 Keep the Horses very short, that the Cattle may draw
 the Body-Horses (or the Pair next to the Thillers)
 to sustain the Pressure occasioned by the Leaders.
 Keep the hind Part as light as possible.
 The Owner will find his Account in such Carriages,
 as they can prevent their being used with Advantage.

Do not exert their natural Strength, for Want of Abutment, having no
 use; but if the Line of Draft is suffered to descend from the
 wheel, then the Animal will gain Ability to use his Strength, and
 be assisted; the Thill and Body-Horses, by this Mode of acquiring
 Power, by drawing horizontally, have no Power beyond the Propor-
 tion together, with Respect to the Waggon, will be applied by Ele-
 mentary Leaders, which, by Experience, is not more than they can easily
 give to them, by giving them more Power than they could other-

As such, I hope they will meet with a reception which the obvious importance of the subject merits, and produce the effect for which they are intended: That as this city is the *first* in elegance, it may also become equally eminent for giving encouragement to employments, that form the substantial basis of public happiness, and will reflect distinguished honour on a nation.

St. James's-Parade, Bath,
August 4, 1777.

I am, &c. &c.

EDMUND RACK.

ART. VII. Reference to the Rolling-Carts, Waggon, and Cart Rollers.

BY an Act for the Amendment and Preservation of the Public Highways, all carriages moving upon rollers of the breadth of sixteen inches, are allowed to be drawn with any number of horses, or other cattle.—And

By an Act for regulating the turnpike roads, such waggons are allowed to carry eight tons in summer, and seven tons in winter, and may be drawn with any number of horses, or other cattle.

They are also permitted to pass upon any turnpike road Toll Free, for the term of Five Years to be computed from Michaelmas, 1774, and after the expiration of the said term, shall pass upon any turnpike road, through any toll-gate or bar, upon paying only one-half of the toll payable for carriages having the felloes of the wheels six inches or upwards.

Both Carts and Waggon, upon this construction, are found by experience to answer every purpose that can be desired, even in the very worst of roads; they are both cheaper and much lighter than common nine-inch broad wheels; they are more durable, and sure to produce a smooth road; and when they have passed often enough to smooth the road, the cattle are able to draw much heavier loads than upon other carriages.

The rollers are placed under the body of the cart or waggon, and run abreast or parallel with each other: They are true cylinders of cast or wrought iron, sixteen inches broad, perfectly flat, without nails, or other projection to injure the face of the road, and are made from two to three feet high, according to the desire of the user. The insides are filled up with strong plank, so as to appear, and have the strength of a solid roller, and yet are hollow in the manner of a cask.

Upon a smooth and hard surface they are drawn as easily as narrow wheels, and it cannot be doubted but the frequent use of them will render the roads both smooth and hard.

The roughness or inequality of roads, occasioned by wheels too narrow, or broad ones not made flat, causes greater resistance to the cattle, than friction upon the axle-trees, and even this article of friction is considerably less in these rollers, than upon the axis of wheels in the common way; for it may be demonstrated, that upon the generality of roads, these rollers have less friction upon the axis than wheels in the common way.

JAMES SHARP.

A Comparison of the Advantages and Disadvantages of high and low Wheels.

SOME persons having objected to the Rolling Carts and Waggon, on account of the lowness of the wheels, it is necessary to consider how far the objection is just, because a comparison of the advantages and disadvantages

advantages of high and low wheels, will demonstrate that the lowness of the rollers is a very great advantage to carriages of this kind.

It is allowed that there are two advantages in high wheels, when applied to carriages which are to be drawn, viz. their being levers lessening friction upon the center, while they stand perpendicular; and their having a larger circumference.

But these advantages are much over-balanced by other inconveniences, and it may be easily proved, that loaded carriages with low wheels will be drawn with greater ease to the cattle, for the following reasons.

Because the great increase of weight* in large wheels, when applied to heavy carriages, is of itself prodigious, and must always be considered as a part of the load.

Because also high wheels, though levers lessening friction upon the center, when they stand perpendicular, are also levers increasing friction by lateral pressure, whenever the carriage passes upon uneven ground. And lastly,

Because high wheels require greater force to pass them over the usual obstacles of the road; the force of the animal being then applied in an horizontal direction, so that great part of it is lost in pressing against the obstacle.

These circumstances considered, the balance will be found in favour of low wheels.

First, Because they are both lighter and stronger.

Secondly, Because, in general, they have less friction.

Thirdly, Because less force is required to surmount the usual obstacles of the Road, the elevating draft being more nearly parallel to the line of ascent.

Fourthly, Because the animal can really apply more strength to the low than high wheel; for the force to the low wheel being applied by elevation, the ground serves as an abutment to the feet of the animal, which gives him power to use his strength in the most proper direction, whereas, horizontally, from a high wheel, he has no power of draft but what is given by his weight.

If, therefore, high wheels could be used without being heavier, or without being levers increasing friction by lateral pressure, or without incurring an improper or indirect application of force; or if they could be used without diminishing the power of the animal, they would be then most advantageous; but, till then, low wheels will be found most beneficial.

Mr. Sharp is prepared to demonstrate the facts above-mentioned, either by experiment, or by the carriages themselves, to those who may think it worth their while to enquire about them.

N. B. By a late addition of triangular scrapers, for cutting the dirt in stiff clay roads, they are also rendered the most compleat and useful carriage that can be used in frost and snow. And to accommodate such carriers as are liable to pass through deep waters, rollers are made three feet high, for such as desire them, which raise the body of the waggon to the full height of those upon the old construction.

To ascertain the advantages of these waggons, they were employed early in the year, 1772, in carrying underwood and timber, amidst a multitude

* A set of nine-inch broad wheels, made in the usual way for large waggons, are generally about thirty hundred weight, and some have been made as heavy as forty. Whereas a set of rollers, compleat for a rolling waggon, seldom weigh above ten hundred, so that about a ton will be saved in the weight of wheels only.

*ROLLING CARTS & WAGGONS,
for the Amendment & Preservation
OF ROADS.
as they are now built by
JAMES SHARP,
of Leadenball Street London,
1773.*



Fig.



Fig. 8.



*Fig. 11. Scraper for Clay Roads
Snow & Ice, & Irish scale.*

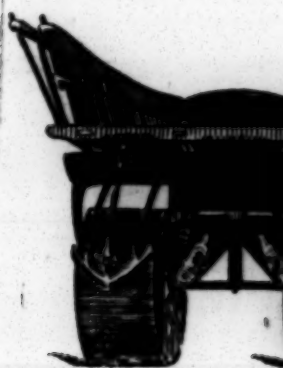


Fig. 7.

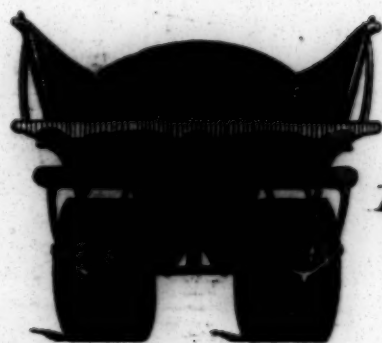
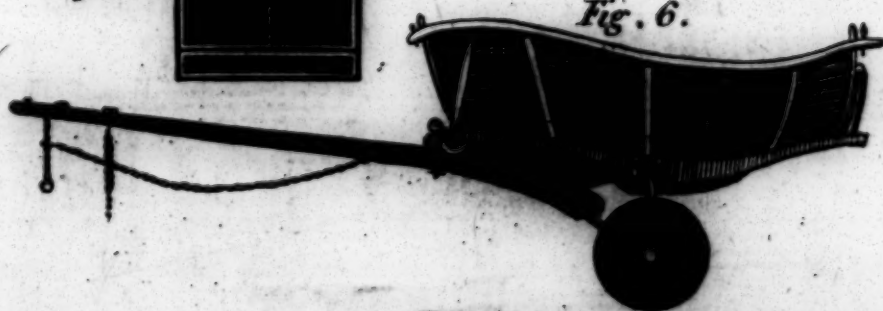


Fig.

Fig. 10



Fig. 6.



Feet

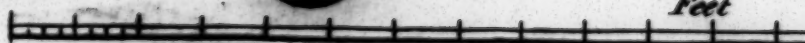


Fig. 1. Plan of the Waggon.

2. The Profile of the Waggon.

3. The Tail of the Waggon with Scrapers.

4. The Tail of the Cart with Scrapers.

5. A View of the Waggon with 8 horses.

6. The Profile of the Cart.

7. The Tail of the Cart.

8. A View of the Cart with 2 Oxen in harness.

9. A View of the Cart with 4 Oxen in harness.

Fig. 10. A Pair of Wheels fitted into an Iron frame so as to form a Garden Roller to be drawn by a Man & when hooked to the tail of the Cart at Fig. 7 forms a complete Roller for Land to be drawn by Cattle, & are also a pair of spare Wheels for a Cart or Waggon.



Fig. 5.

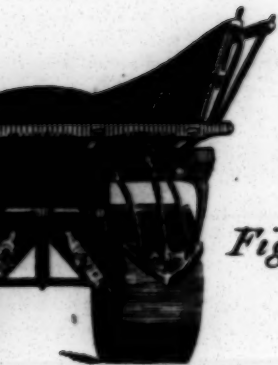


Fig. 3.



Fig. 9.

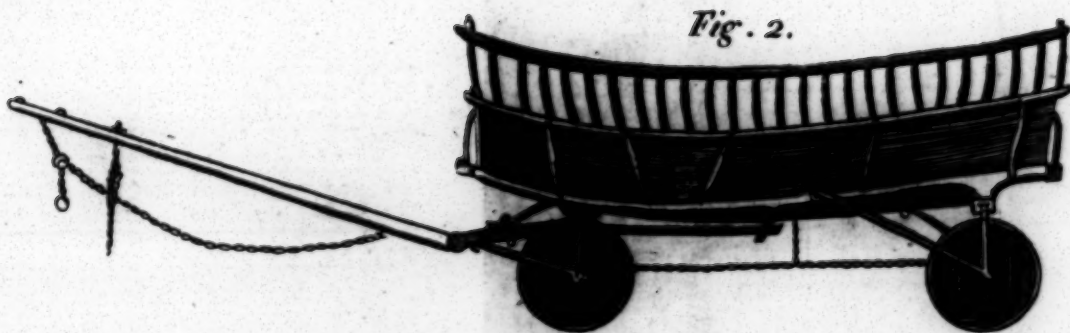


Fig. 2.



Fig. 4.

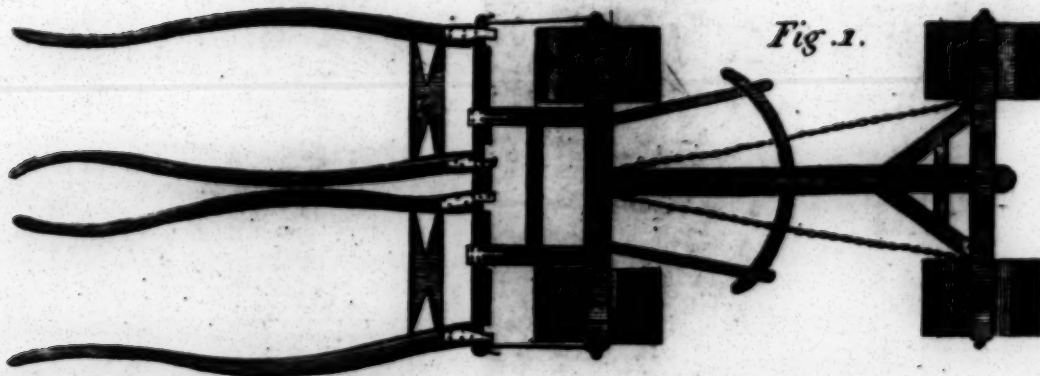
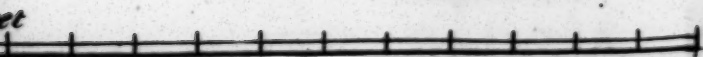
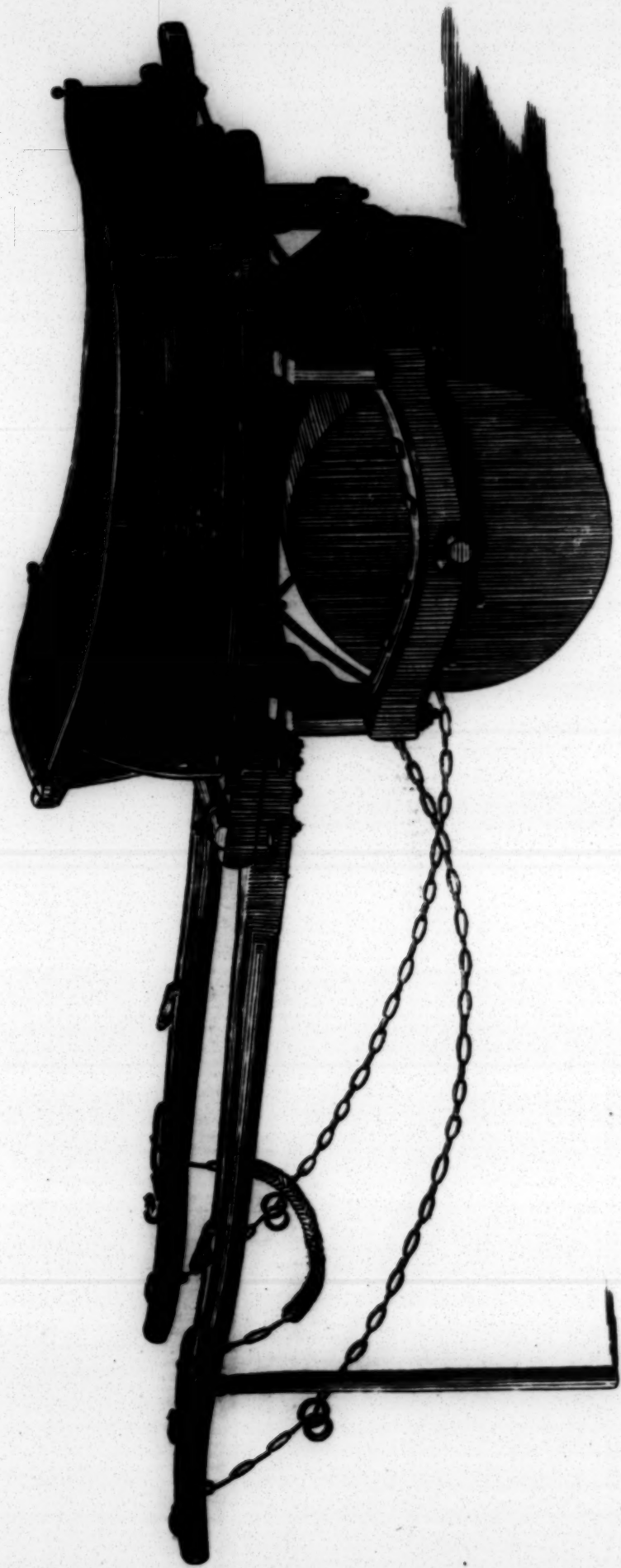


Fig. 1.





*A Cart Roller with light wheels in three Divisions
for easy Turning*

Made & Sold by James Sharp London

• Miles's Patent, & Co. Birmingham

itude of narrow wheel'd waggons in a part of Northamptonshire, which at that time was remarkable for the very worst roads, both private and turnpike, perhaps in the kingdom; and it was found, that when the narrow wheels could pass no longer, the rolling waggons still continued passing, with larger loads than the narrow wheels usually carried; and I have frequently seen them pass over sloughs with great ease, in which narrow-wheel'd waggons have been mired and laid fast, till drawn out by a great number of additional horses.

In the latter end of the same year, my rolling waggons made about thirty journeys to Bedford; and during the winter, they made about one hundred and twenty journeys to and from Whittlebury Forest and Northampton, with such heavy loads of timber and coals, that some people supposed the roads would have been destroyed by such constant carriage in wet weather (it not being usual in this country to carry timber in winter months); but the contrary effect was remarkably produced by them, for the road instead of being injured, was apparently improved; the paths formed by the rollers, both in private and turnpike roads, were so even and flat, as to make an excellent passage for horses abreast, or any kind of quartering carriages, and were so smooth and clean, that even foot passengers preferred them to walking in the fields.

Since that time frequent journeys have been made with the usual load (viz. about four tons) to the most distant parts of this kingdom; and this in the usual number of days, and with the usual loading. And notwithstanding the unaccountable prejudice of some of the drivers, (who have frequently given out, as they passed the road, that they had very small loads in the waggon, when they had at the same time as much as the law allowed them to carry) yet the owners of those waggons (I have reason to believe), are very well satisfied with the trials they have made; and there is no doubt, they will soon find them profitable to themselves, as well as serviceable to the public.

And further, I have received letters from persons in many different parts of this kingdom, that have used such carriages, and have greatly approved of them.

THE SINGLE-SHAFTED CARTS, with rollers two feet high, and wrought iron tire and scrapers, are the best carriage than can be used for the common purposes of farmers.

THE DOUBLE-SHAFTED CARTS are the most proper for the use of gentlemen, because the roller follows the feet of the horses, and prevents injury to the turf upon which they are drawn; they are also the best adapted to very bad roads, because they quarter over the deep ruts and ridges made by narrow wheels, and they both make and preserve an excellent track for coaches or post-chaises.

Both the **SINGLE AND DOUBLE SHAFTED CARTS** are cheaper than common broad wheel'd carts, with iron axle-trees, to which they must always be compared, being larger and better suited to very heavy loads.

TUMBRILL CARTS, WITH NINE-INCH WHEELS, from eighteen inches to two feet high, are executed upon this plan, with scrapers, and are the most useful carriage for removing earth, &c. with a single horse.

All the above may be converted into Land Rollers, by fixing a pair of divided rollers, as at Fig. 10, at the tail of the cart, by which means the whole surface is covered by rollers.

VOL. II.

M m

The

My waggons have frequently been sent with a heavy load through a bad lane, when a quarter has been wanted for post-chaises, which has made it going road for a month or six weeks to come.

The CART ROLLERS are different from ROLLING CARTS, though they are capable of carrying heavy burthens like Carts, and yet are light in themselves, but they are neither so strong, nor can they be drawn so easily as ROLLING CARTS, nevertheless they are excellent for the particular purposes of garden cart, or land roller, &c.

JAMES SHARP.

ART. X. *On the Harvest and Hunter's Moon.*

Mr. SYLVAN,

SHERBORNE, Dorset, Aug. 22.

IF you think the following extract from an eminent author, concerning the Harvest and Hunter's Moon, which at this season make their appearance, worthy a place in your useful and entertaining Magazine, it may perhaps afford some pleasure and amusement to such of your readers who have an astronomical relish, and are somewhat conversant in the globes, and may not be displeasing to the generality of your readers.

I am, Sir, your's, &c.

G. S.

It is generally believed the moon rises about 48 minutes later every day than on the preceding; but this is true only with regard to places on the equator: In places of considerable latitude there is a remarkable difference in the harvest time, with which farmers were better acquainted than astronomers till of late, and gratefully ascribed the early rising of the moon to the goodness of God, not doubting that he had ordered it so on purpose to give them an immediate supply of moonlight after sun-set for their greater conveniency in reaping the fruits of the earth. In the instance of the harvest moon, as in many other things discoverable by astronomy, the wisdom and beneficence of the Deity is conspicuous, who really ordered the course of the moon so as to bestow more or less light on all parts of the earth, as their several circumstances and seasons render it more or less serviceable. About the equator, where there is no variety of seasons, and the weather changes seldom, and at stated times moonlight is not necessary for gathering in the produce of the ground, there the moon rises about 48 minutes later every day or night than on the former. At considerable distances from the equator, where the weather and seasons are more uncertain, the autumnal full moons rise very soon after sun-set for several evenings together. At the polar circles, where the mild season is of very short duration, the autumnal full moon rises at sun-set from the first to the third quarter; and at the poles, where the sun is for half a year absent, the winter full moons shine constantly, without setting, from the first to the third quarter.

It is soon said, that all these phenomena are owing to the different angles made by the horizon, and different parts of the moon's orbit, and that the moon can be full but once or twice in a year in those parts of her orbit, which rise with the least angles; but to explain this subject intelligibly, we must dwell much longer upon it.

The plane of the equinoctial is perpendicular to the earth's axis, and therefore, as the earth turns round its axis, all parts of the equinoctial make equal angles with the horizon both in rising and setting, so that equal portions of it always rise or set in equal times; consequently, if the moon's motion was equable, and in the equinoctial, at the rate of twelve degrees from the sun every day, as it is in her orbit, she would

rise

rise and set 43 minutes later every day than on the preceding; for twelve degrees of the equinoctial rise or set in 43 minutes of time in all latitudes.

But the moon's motion is so nearly in the ecliptic, that we may consider her at present as moving in it; now the different parts of the ecliptic, on account of its obliquity to the earth's axis, make very different angles with the horizon as they rise or set; those parts or signs which rise with the smallest angles set with the greatest, and vice versa. In equal times whenever this angle is least, a greater portion of the ecliptic rises than when the angle is larger, as may be seen by elevating the pole of a globe to any considerable latitude, and then turning it round its axis in the horizon; consequently when the moon is in those signs which rise or set with the smallest angles, she rises or sets with the least difference of time, and with the greatest difference in those signs which rise or set with the greatest angles.

Suppose the north pole of the globe to be elevated to the latitude of London, $51\frac{1}{2}$ degrees above the horizon, and the south pole depressed as much below it, because of the oblique position of the sphere in this latitude, the ecliptic has the high elevation above the horizon of Cancer, making an angle of 62 degrees with it, when Cancer is on the meridian, at which time Libra rises in the east; but let the globe be turned half round, till Capricorn comes to the meridian, and Aries rises in the east, and then the ecliptic will have the low elevation above the horizon, making only an angle of 15 degrees with it, which is 47 degrees less than the former angle, equal to the distance between the tropics; hence we find the smallest angle made by the ecliptic and horizon is when Aries rises, at which time Libra sets; and the greatest when Libra rises, at which time Aries sets; from the rising of Aries to the rising of Libra, which is twelve sidereal hours, the angle increases; and from the rising of Libra to the rising of Aries, it decreases in the same proportion. By this article and the preceding it appears, that the ecliptic rises fastest about Aries and slowest about Libra.

As the moon can never be full but when she is opposite to the sun, and the sun is never in Virgo and Libra but in our autumnal months; 'tis plain that the moon is never full in the opposite signs Pisces and Aries but in these two months, and therefore we can have only two full moons in the year, which rise so near the time of sun-set for a week together, as above-mentioned; the former of these is called the Harvest Moon, and the latter the Hunter's Moon. On the parallel of London as much of the ecliptic rises about Pisces and Aries in two hours as the moon goes through in six days, and therefore while the moon is in these signs, she differs but two hours in rising for six days together, that is, twenty minutes later every night than on the preceding; but in fourteen days afterwards the moon comes to Virgo and Libra, which are opposite signs to Pisces and Aries, and then she differs almost four times as much in rising, namely, one hour and about fifteen minutes later every day and night than the former, while she is in these signs; for their rising angle is at least four times as great as that of Pisces and Aries.

All these things will be made plain by putting small patches on the ecliptic of a globe, as far from one another as the moon moves from any point of the celestial ecliptic in twenty-four hours, which at a mean rate is $13\frac{1}{2}$ degrees, and then in turning the globe round observe the rising and setting of the patches in the horizon, as the index points out the different times in the hour circle.

After all this it will probably be asked, why we never observe this remarkable rising of the moon but in harvest, since she is in Pisces and Aries at least twelve times in the year besides, and must then rise with an equal

difference of time as in harvest? The answer is plain; for in winter these signs rise at noon, and being then only a quarter of a circle distant from the sun, the moon in them is in her first quarter; but when the sun is above the horizon, the moon's rising is neither regarded nor perceived. In spring these signs rise with the sun, because he is then in them, and as the moon changeth in them at that time of the year, she is quite invisible. In summer they rise about midnight, and the sun being then three signs, or a quarter of a circle, before them, the moon is in them about her third quarter, when rising so late, and giving but very little light, her rising passes unobserved. And in the autumn, these signs being opposite to the sun, rise where he sets, with the moon in opposition, or at the full, which makes her rising very conspicuous.

ART. XII. *Remedy to prevent MADNESS in DOGS.*

By Mr. CHRISTOPHER WESTON.

PUT four ounces of quicksilver (vulgarly called from its great fluidity live quicksilver) into an earthen pan, and pour thereon two quarts of boiling water; when cold, set it in the usual place where the dog has been accustomed to drink his supply of water; when that quantity is expended, pour two quarts more of boiling water on the same quicksilver as before, and pursue this method as long as it may be necessary; and though every fresh portion of water, even if continued every day for a whole year, will be effectually impregnated with very subtle and most valuable preventive qualities, yet upon weighing the quicksilver afterwards with the greatest accuracy, it will be found scarce any way sensibly diminished in its weight.

ART. IX. *Premiums offered by the London Society of Arts, &c. for Planting and Husbandry.*

[Continued from p. 182.]

BORECOLE. For sowing and duly cultivating Borecole in the 1777, for the feeding of sheep and black cattle, on the greatest quantity of land, (not less than three acres) and giving an account of the time of sowing, and planting out, distance of the plants, soil, culture, produce, and effects on cattle or sheep fed with it, &c.

For the next greatest quantity of land, not less than two acres, &c.—Certificates to be produced on or before the first Tuesday in Nov. 1778.

TURNEP-ROOTED CABBAGE. To the person who shall raise in the year 1777, the greatest quantity, per acre, of turnep-rooted cabbage, on not less than one acre; the gold medal.—Certificates of the number of acres, and produce by weight, free from leaves and dirt, and before housing, with an account of the soil, preparation, and culture, to be produced on or before the first Tuesday in Nov. 1778.

TURNEPS, CARROTS, and CLUSTERED POTATOES. The like premiums will be given on the same conditions for turneps, carrots, and clustered potatoes.

SCOTCH CABBAGE. To the person who shall raise in the year 1777, the greatest quantity per acre of that cabbage, usually known by the name of Scotch Cabbage, either the red or green kind, not less than one

one acre; the gold medal.—Certificates of the quantity of land, and produce by weight, free from roots and dirt, with an account of the soil, preparation, time of sowing, and distance of rows, to be produced, on or before the first Tuesday in Feb. 1778.—The candidate to specify whether it is the green or red cabbage.

AMERICAN AND DUTCH CABBAGE. The like premiums will be given on the same conditions for the American and Dutch Cabbages, severally.

Not less than the produce of one-fourth part of the acre, of the four last classes, indifferently chosen, to be weighed.

UTILITY OF POTATOES. For the most satisfactory experiments to ascertain the utility of potatoes (except the clustered kind, for which separate premiums are offered) in feeding black cattle; the gold medal.—The number of cattle so fed, to be not less than five.

For the most satisfactory experiments to ascertain the utility of potatoes in feeding sheep, hogs, colts, or horses; the gold medal.—The number of sheep so fed, to be not less than twenty; of hogs, ten; of colts or horses, three.

N. B. The quantity of food given must be weighed, as also the black cattle, sheep, and hogs, both before and after fattening; and an exact account of every other particular relative thereto; specifying the breed and age of such black cattle, sheep, and hogs; to be produced to the Society, on or before the first Tuesday in March, 1778.

UTILITY OF CLUSTERED POTATOES, CARROTS, AND PARSNEPS. The same premiums will be given on the same conditions for feeding black cattle, sheep, hogs, and horses, or colts, severally, on Clustered Potatoes, Carrots, or Parsneps.—Certificates to be produced on or before the first Tuesday in March, 1778.

LUCERNE FOR FATTENING CATTLE. For the most satisfactory account, verified by experiments, to ascertain the utility of Lucerne in fattening black cattle; the gold medal.—The number of cattle so fattened, to be not less than five.—Certificates to be produced on or before the last Tuesday in March, 1778.

N. B. The quantity of Lucerne given must be weighed, as also the cattle, both before and after fattening, and an exact account of every other particular relative thereto.

REARING BLACK CATTLE WITHOUT MILK. For an account of the best method of rearing black cattle without milk, excepting the first four days, verified by experiments; the gold medal or 20l.—The accounts to be produced to the Society on or before the first Tuesday in Feb. 1778.

REARING AND FATTENING HOGS. For the best account of the most profitable method of rearing and fattening hogs, verified by experiments; to be delivered to the Society, on or before the first Tuesday in Feb. 1778; the gold medal, or 20l. The food must be weighed, as also the hogs, both before and after fattening.

MADDER. To the person who shall produce from one acre of land, the greatest quantity of Madder properly prepared for the use of manufacturers, not less than 25 hundred weight; the gold medal or 25l.

For the next greatest quantity, not less than twenty hundred weight; the silver medal, or 15l.

Each claimant must specify the different sorts into which the madder is divided, and the quantity of each sort, and must send a sample of two pounds weight of each sort with proper certificates of the whole quantity,

ty, being of the same quality with the respective specimens, on or before the first Tuesday in November, 1777; as also a certificate of its being the produce of one acre; and likewise a full account of the method of culture and preparation.

CULTIVATING THE TRUE RHUBARB. For raising, before the end of the year 1777, the greatest number of plants, not less than one thousand, of the *Rheum Palmatum*, or true Rhubarb; the gold medal.

For the next greatest number, not less than five hundred plants, the silver medal.—Certificates of the number of plants, that they stand at least six feet asunder, that they have been in a thriving state during the preceding summer, with an account of the soil, culture, and aspect, to be produced on or before the second Tuesday in Feb. 1778.

The same premiums are extended to the year 1778.

RHUBARB. For the greatest quantity of Rhubarb of British growth, not less than ten pounds weight, equal to such as is commonly sold in the shops, under the name of *Turkey* or *Russia Rhubarb*, to be produced, with a particular account of the culture and cure, on or before the first Tuesday in November, 1777; the gold medal.

For the next greatest quantity, not less than six pounds; the silver medal.

RHUBARB. For the greatest quantity of Rhubarb of British growth, not less than 100 pounds weight, equal to such as is commonly sold in the shops, under the name of *Turkey* or *Russia Rhubarb*, ten pounds of which to be produced as a sample, with certificates that the remainder is of equal goodness; and a particular account of the manner of culture and cure, on or before the first Tuesday in November, 1778; the gold medal.

For the next greatest quantity, not less than fifty pounds weight, the silver medal.

ORCHIS FOR SALEP. To the person who shall raise from seed the greatest number, not less than 100 plants, of the *Orchis Morio Farnina*, or common female Orchis, (or for any of the larger rooted Orchis) for the purpose of making Salep; the gold medal.—Certificates to be delivered, with a specimen of the roots, on or before the last Tuesday in December, 1777.

The same premiums are extended one year further.

SALEP.* To the person who shall make the greatest quantity of good merchantable salep, not less than fifty pounds weight, from any kind of English Orchis; 20l.—A sample not less than seven pounds weight, with certificates of the expence and manner of preparing it, to be produced on or before the first Tuesday in March, 1778.

By Order of the Society,
SAMUEL MORE, Secretary.

The following method of making salep was communicated by Mr. Moulton, of Rochdale, to Dr. Percival, and printed in the second volume of his experimental essays:—

The new roots are to be washed in water, and the fine brown skin which covers them, is to be separated by means of a small brush, or by dipping them in hot water, and rubbing them with a coarse linen cloth; the roots thus cleansed are to be spread on a tin plate, and placed in an oven heated to the usual degree, where they are to remain six or ten minutes, in which time they will have lost their milky whiteness, and acquired a transparency like horn, without diminution of bulk; they are then to be removed to dry and harden in the air, which will require several days, or by a gentle heat they will be finished in a few hours.

POETICAL ESSAYS.

NIGHT, An ODE.

NOW the full orb'd sun extends
His horizontal beams, and lends
A milder warmth, a feebler ray,
And glides with gold, the western way.

Now in Ocean's bed he sleeps
His dewy locks, while nature weeps,
In dewy tears, the loss of day,
From the eyes of flowers gay.

Now the birds their notes restrain:
Homeward bends the weary swain,
Whistling all his toils away,—
Toils renew'd at rising day.

The western hemisphere, which late
Beauteous shone in radiant state,
A purple mantle now o'er spreads,
And blue appears the mountain's heads.

Twilight, from the eastern hills,
Spreads her pinions o'er the fields;
Ush'ring o'er th' unbounded space,
Solemn Night with sable face.

Behold! upon the ebony car
I see the awful Queen from far!
See! she hovers o'er the plain,
With shades and darkness in her train.

But, majestically bright,
Rising to illumine the night,
Cynthia, o'er th' ethereal plains
In lambent glory mildly reigns:—
See her silver-footed steeds,
Faster far than Thracia breeds,
Thro' the azure regions fly,
And shine resplendent thro' the sky.

O'er the dim face of earth her rays
Descend, and light again displays
The woods and plains, and hills and
dells.

Tufted groves, and flow'ry vales,
Where her eye the cowslip hides,
Where the purpling riv'let glides,
While the whispering breezes bring
Fragrance on their dewy wing.

See the golden planets rise,
Beaming brightness thro' the skies,
All ether in a glow appears,
And Night a silver mantle wears.
Stars unnumber'd shine on high,
And meteors glide across the sky.
The comet there eccentric runs,
And other planets, other suns
Incircling, swiftly roll around,
Enlightning all the vast profound.

Here with majesty divine,
Power and Wisdom blended shine;
A God, a God, the heav'n's display,
Who rules with universal sway;
Who in the vast ethereal space,
Appoints each orb its proper place.

Silence now her empire holds;
Sleep in her arms Creation folds.
Fancy now convenes her court,
And deals illusions round in sport,
Hovering dreams fly thick in air,
And delusive scenes prepare,
As insects in the flow'ry grove,
Or vows of beaus when making love,
Thick around our beds they rove;
Whispering in the lover's ear,
Now he thinks his charmer near;
Fleeting phantoms in his brain
Aërial forms of fancy's train.
The Statesman now of titles dreams;
The Poet, of Elysian themes;
The Soldier dreams of storming towns;
The School-boy, of his master's frowns;
The Prelate, of a richer see,
And Lawyer—of a double see.

Here, beneath mild Luna's light,
Thro' the silence of the night,
Screams the owl in plaintive cries,
And cleaves with dusky wing the skies;
While the echoing hills around,
Return the melancholy sound.
Hark! from yonder ancient tower,
The tongue of time proclaims the hour,
How it shakes th' elastic air!
How it vibrates on mine ear!
It tells me two long hours are run,
Since departed hence the sun:
It warns me home—I'll then retire,
Where rest and sleep their sweets inspire;
And, safely, in my humble cell
Repose, and bid the world—farewell!

The CONTENTED FARMER.

WHILST some to kill their time
ne'er rest at home,
But through th' alluring wilds of folly
roam;
Whilst some turn patriots, fir'd with
furious zeal,
And serve, or feign to serve, the public
weal;

Let

Let kings and nobles mind th' affairs
of state;

Neither am I nor wish to be so great.
Let men whose souls the martial trum-
pet warms,

Who pant for glory at the clash of arms,
Pursue in England's cause th' opposing
foe,

And strike, where Justice bids, th' a-
Let me enjoy my wonted country life,
Free from all tumult, enmity, and strife,
Early to rise in sweet inspiring spring,
Walk through my farm, and hear the
warbler's song,

And while I rove delighted through
the fields, [rural yields,
To view the various charms that na-
I rouse my flocks, and if I view them
thrive,

My heart beats rapture, and I'm more
Mild May and June their blooming
sweets exhale, [gale.
And waft me pleasure on each fragrant
Though storms and tempests may bad
crops portend,

And sometimes too I may deplore a
friend;
Though these conspire to afford a gloo-
my scene,

My mind be easy and my soul serene.
Through every varied season of the year,
Let innocence and calm content appear;
For had I more than Cæsar, e'er pos-
sessed,

Can wealth give ease, or free a tortur'd
No good it can bestow, unless we find
A guiltless conscience and a peaceful
mind.

THE SNAIL, and GRASSHOPPER.

A Snail who fought a thicker's shade,
His house upon his back convey'd,
Nor had he far to go;
But weak and slow, or swift and strong,
Loaded, the way seem'd ever long,
And he too thought it so.

On as the raging dog-star burn'd,
Like other travellers he mourn'd,
Drew in his horns, then out:
Now stays, or seems to stay his pace,
The shadow on the dial's face,
As swiftly steals about.

Once, as he stopp'd his bold career,
He chanc'd a Grasshopper to hear,
— So, this, said he, is clever:
That Grasshopper's a hearty blade;
He treats me with a senerade:
I've met with mirth however.

But ah! I envy much his fate,
With songs and carols rear and late,
When he his heart regales
Sole sovereign of the universe,
This world was made for grasshoppers:
A woeful world for snails.

While melancholy, moping I,
Within my stupid shell must lie,
A poor inactive drone;
They rove, the meads & dew to sip,
Go twenty paces at a step,
And leave me stir'd with one.

O Snail, thy fortunes I protest,
Reply'd the noisy Grasshopper,
(He too was discontent!)
Nor paching furs, nor patching mail,
Can penetrate the coat of shell,
Or pierce thy native tent.

While in your hospitable shell
Like some safe citizen you dwell,
What wretched fate have I?
When every insult of the air,
The Dog-star's sick'ning fume I bear,
And chill'd by winter die.

MORAL.

In equal lots our human fortunes fall,
And nature pours the mingled cup for
all:

If e'er we envy, the mistake lies here;
We see but what we want, not what
we fear.

CORYDON.

THE CHOICE.

A favourite Ballad, sung at Ramsgate.

THE swain that I'd chuse, gentle
Cupid, should be,
In person still pleasing, good-natur'd
and free;

Nor meanly, yet low, or vain with false
pride,

Let honour and virtue his actions fill
To female poor foibles he too should
be blind,

And civil to all, yet to me only kind:
The feelings of nature thou'd temper his
wit,

And tho' I am wrong, let him sometimes
When mutual the passion, no care fills
the breast,

And when my swain's happy, then dou-
belov'd thus and loving no husband can
roam,

Or find real bliss but with spoils and
The pleasures of Hymen I find would
desire,

And stretch with'd lover to make me
If from the faint copy, the real you see,
Ah Cupid, dear Cupid, reserve him for
me.



T H E
FARMER'S MAGAZINE.

—————
*A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]*

American Husbandry.

VIRGINIA **T**HE products of Virginia are wheat and
continued. all other kinds of grain and pulse, but the
principal commodity of this country as well
as of Maryland, is Tobacco, of which prodigious quantities
are raised and sent to every part of Europe; as this plant is so
much made use of, a particular description of it, and the mode
of cultivation, cannot, we presume, be disagreeable. This
plant is a native, and was originally planted by the Indians in
great quantities, but what they now consume, they get in ex-
change for other commodities of the English, who have con-
siderably improved its cultivation. When arrived at its full
growth, it is about five or six feet high, the stalk is strait,
hairy, and clammy, the leaves alternate of a pale yellowish
green, and towards the bottom very large. It is propagated
by sowing the seed in beds, from whence afterwards they are
transplanted the first rainy weather into a ground disposed into
little hillocks, like the Kentish or Farnham hop-gardens; in
about a month they become a foot high, when they are topped,
and pruned of the lower leaves, and with great care and affi-
duity kept clear from weeds and worms; in about six weeks
after, they attain their full growth, and begin to turn of a
brownish colour; as fast as the plants ripen they are cut down,
and put in a heap; here they lie a night to sweat, the next
day they carry them to a house built for the purpose of drying,
where the plants are hung up separate in a place which has a free
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admission of air, and is defended from rain; when the tobacco is dry, which will be in about five or six weeks, they take it down in moist weather to prevent its crumbling to pieces, which it would otherwise do. The plants are now laid upon sticks, and covered up for a week or two longer, and the different sorts are selected, the top being the better, the bottom the worst sort of tobacco, which is either packed up in hogheads, or formed into rolls.

Besides these, Virginia produces rice, hemp, flax, and of the two last sufficient for a considerable exportation.

MARYLAND. This province was granted by King Charles the First, in the year 1633, to Lord Baltimore, who called it Maryland in honour of the Queen, and soon after about two hundred popish families embarked with his Lordship, and gained the confidence of the natives by purchasing their lands at an easy price, who ceded to them half of their principal towns, and very soon after gave up the whole: During the continuance of the civil wars, and till the restoration, abundance of catholic families went over to Maryland; a free toleration was allowed for christians of all denominations, but at the revolution it was thought proper to alter the religious constitution and establish protestantism, since which the papists have been deprived of all share in the government, and often suffered by the penal laws made against them.

Maryland is situated between the 38th and 40th degrees of north latitude, is about 140 miles long, and 135 broad, is bounded by Pennsylvania, Virginia, and the Apalachian mountains, and parted by the Chesapeak bay into two divisions, the eastern containing the counties of Somerset, Talbot, Dorchester, and Cecil; the western contains the counties of St. Mary's, Charles, Prince George, Calvert, Ann Arundel, and Baltimore. The summers in Maryland are very hot, and the winters equally as cold, but very short, there not being above one month of bad weather throughout the year; the rains are sometimes very heavy, but the sky is in general very clear and the air healthy.

The animals are the same as in Pennsylvania, and the woods contain great quantities of wild hogs. They raise annually great quantities of hemp and flax, but the chief staple commodity is tobacco, which forms the medium of currency, being received in debts and taxes; and the inspectors notes for tobacco are transferable; their other exports are salted pork, iron, flax, and hemp. Great quantities of corn are also raised here, and fruit-trees of all kinds flourish well: besides fruit-trees, Maryland has oaks, walnuts, chesnuts, and almost every other kind found in Europe.

CAROLINE.

CAROLINA. The French under the great protestant Admiral Chastillon, sent in the year 1564, a fleet of ships to Carolina, in order to make a settlement in that province, which, by conciliating the affections of the natives, they found means to accomplish and built a fort; but the Spaniards jealous of any power but themselves, attacked the infant colony, demolished the fort, and put them all to the sword. From this time no attempts were made to settle Carolina, till in the year 1663, several English noblemen and gentlemen of distinction obtained from the crown a charter of property and jurisdiction of that country, and, dividing the lands out in portions, to such as went over with them, formed a commonwealth, with a system of laws drawn up by the celebrated Locke.

Some time after, disputes in religion, a misunderstanding between the proprietors and the people, and a war with the Indians, threatened the destruction of the colony; but the legislature interposing, an act of parliament passed, to place the colonies under the care and inspection of the crown; and a peace being concluded with the Indians, commerce revived, and the colony flourished.

The Carolinas are situated between the 32d and 37th degrees of north latitude, and between the 76th and 86th of west longitude, being about 700 miles long, and 260 broad; they are bounded by Virginia on the north, by Georgia on the south, by the Atlantic Ocean on the east, and the Apalachian mountains on the west. The great divisions are, North Carolina, containing the counties of Albemarle, Bath, and part of Clarendon; and South Carolina, containing the counties of Craven, Berkley, Colleton, Granville, and the other part of Clarendon.

The climate and soil of these provinces do not greatly differ from Virginia, but where they do, the advantage is on the side of Carolina, which is one of the finest in the western world; not that it is free from storms, for the weather is subject to sudden changes, and those so sharp, that the inhabitants are obliged to be very cautious in their dress and diet. Though not free from hurricanes, they are not near so violent as in the islands of the West-Indies; the months of March, April, May, and June, are exceedingly temperate; July, August, and September, are intensely hot; the winters are sharp, yet seldom very frosty, so that many plants, not hardy enough to stand the winter of Virginia, flourish in Carolina, such as oranges, of which they have plenty; vegetation is so quick, and there is something so benign in the air and soil, that where the latter seems most barren and unpromising, if left to

itself awhile, spontaneously produces a quantity of those various plants and beautiful shrubs and flowers, for which this country is so famous.

The lands near the sea are little better than a marsh, and for eighty miles distant from it, the country is one continued level, without hills, dales, or rocks, but beyond this, it gradually improves, and about a hundred miles from the coast, it begins to grow hilly, and is amazingly fertile.

The animals of Carolina are the same as in Virginia; the European animals, introduced by the settlers, are prodigiously increased, particularly cows, of which the planters have from one hundred to a thousand each, which in the morning are turned into the woods, and return at night to their calves, which are kept in fenced places; they are milked and kept all night, and when milked in the morning turned loose again: The hogs are very numerous, running wild in the woods like the cows.

Every kind of vegetable would grow in the Carolinas, and all European plants are produced in the greatest perfection, superior to what they are in their native soils: The productions are, vines, wheat, Indian corn, barley, oats, pease, flax, hemp, tobacco, rice, and indigo; of these the principal, as articles of commerce, are rice and indigo.

As rice and indigo form so great an article of commerce and agriculture of the Carolinas, it may be deemed requisite in us if we do not give a particular account of their cultivation and manufacture, which will come with as much propriety in this as any other part of our dissertation; but as we would not wish to encroach too much of the Magazine for this particular department, we shall defer the account of both till our next.

[To be continued.]

ART. II. *Observations on preparing Manures.*

DUNG of animals that chew the cud, being more putrefied than that of other beasts, is fit to be mixed with the soil without being first collected into a dung-hill. A horse does not chew the cud, and in horse-dung may be found straw, or rye-grass, broken into small parts, but not dissolved: it is therefore proper that the putrefaction should be completed in a dunghill, where it ought to be mixed with cool materials: for horse-dung is so very hot, that in a dunghill by itself it singes and burns instead of putrefying. The difference between the
dung

dung of a horse and a horned animal is visible in a pasture field. The grass round the former (as one of your correspondents has already remarked) is withered; but round the latter it is ranker and more verdant than in the other parts of the field. Therefore a mixture of moist cool stuff ought always to be made with horse-dung before it is laid on the land.

To prevent the moisture from running out of a dunghill, its situation should be a little lower than the surface around it; and, to prevent rain water from running into it, surround it with a ring of fods.

If the soil on which the dunghill stands is loose and porous, pave it, to prevent the juices of the dung from soaking into the ground. If there be too much moisture, lead it off by a small gutter to impregnate a quantity of rich mould laid there to receive it. This will make the mould as good as the dung itself.

Dung fresh from the stable ought to be carefully spread, and mixed with that already on the dunghill; when left in heaps upon it, fermentation and putrefaction go on unequally. Complete putrefaction is of more consequence than Farmers generally imagine; particularly in regard to the seeds of weeds that are in the dunghill; if they remain sound, they are carried out with the dung, and infest the ground.

Complete putrefaction is of still greater consequence, by pulverizing the dung, in which condition it mixes intimately with the soil, and operates the most powerfully. In lands intended for barley, raw undigested dung has an unhappy effect; it keeps the ground open, admits drought, and prevents the seed from springing. On the other hand, when thoroughly rotted, it mixes with the soil, and enables it to retain moisture. It therefore is evident, that the best time of laying dung on a field is when that dung is in its highest pulverization, for then it mixes most intimately with the earth. Dung divides and spreads best when moist, and the finer it is spread the more service it is of to the land. When spread it should be ploughed in without delay; for when a heap lies two or three weeks, the moisture is imbibed into the ground too much where the heap is, and this will produce tufts of corn more vigorous than the rest, and much is evaporated by the sun and air; never leave it exposed to frost and snow, the spirit of it is extracted by rain, and carried away with it. The dung divested of its sap becomes dry in spring, and incapable of mixing properly with the mould; it is turned over whole by the plough and buried in the furrows.

As dung is so valuable in husbandry, one would imagine that the collecting it would be a capital article with an experienced industrious Farmer: And as the mixing it with such animal and vegetable substances as will easily rot, adds much to its value; a Farmer cannot be too assiduous in collecting them also.

ART. III. *On the Advantage of sowing Lucerne.*

MR. AGRICOLA,

I Have for some years past applied a part of my land to Lucerne, which has paid me very well, and therefore I take the liberty of writing to you about it, that so you may tell the rest of the farmers in your Magazine, which I suppose they all read in other places as well as about we. Now, sir, I am not so selfish as to want to keep all improvement to myself, and so I will tell you all about it just as I raise it. The land on which I sow it is good turnip land, lightish and rather sandy at-top, but there is about six inches deep good loam and clay. I give about 7s. 6d. an acre for it. I sowed an acre and half of this land three years ago, upon a turnip fallow in the spring, by way of experience. Some of my neighbours said I was a fool that I did not sow corn with it, but I found it did not answer. As the turnips had cleaned the land, it was not very weedy, and the few weeds that did grow were cut down with the Lucerne, before they run to seed, at the first mowing. After this, the growth of the crop was always quicker than that of the weeds. Every spring I harrow it till it looks like a fine fallow. After harrowing I lay on six loads of good rotten dung to the acre. Now as I have kept exact account of profit and loss, and charges, I think I can give it you pretty justly. I have cut it every five weeks, and the quantity was so great, that it kept twelve horses almost the whole summer with very little other food. I am certain an acre of it would maintain five horses from April to Michaelmas without any thing else. I had five cuttings last year on my acre and half; if I had made it into hay, I am certain there would have been nine tons of it; and that would have fetched me eighteen or nineteen pounds. My whole expence came to but two pounds fifteen shillings and six-pence; so that you see it paid me well. I am going to sow more next spring, for I think it will pay me better than any thing else, and so I am

Your reader, and humble servant to command,
Bedfordshire.

A FARMER.

[We

[We thank our honest friend for this letter, which we have given in his own words. He is certainly right in his notion that Lucerne will pay better than any thing else, on a soil that suits it; and we hope many of our readers will adopt this Farmer's plan, which seems to be a good one, and we are persuaded will fully answer to them also.]

ART. IV. Mode of forming Plantations at the Duke of Portland's Seat in the County of Nottingham.

DR. Hunter, in his learned and ingenious annotations on Mr. Evelyn's Sylva, after the copious directions for raising the oak*, which we have already from that valuable work laid before our readers, subjoins the following Letter, written by Mr. Speechly, gardener to his Grace the Duke of Portland, describing the method of forming plantations upon the Duke's estate in the county of Nottingham. It is replete with so much valuable practical information, and a subject of so much importance, that we make no apology for laying it before our readers:—

“ Few noblemen plant more than his Grace the Duke of Portland; and, I think I may say, without vanity, none with greater success. But as no man should think of planting in the very extensive manner we do, before he is provided with well-stocked nurseries, it may not be amiss, before I proceed further, to give a short sketch of that necessary business, as also to inform you of the soil and situation of our seat of planting. The greatest part of our plantations is on that soil, which in Nottinghamshire is generally distinguished by the name of Forest-land. It is a continuation of hills and dales; in some places the hills are very steep and high; but in general the ascents are gentle and easy.

“ The soil is composed of a mixture of sand and gravel; the hills abound most with the latter, and the vallies with the former,

* The Oak, says Dr. Hunter, is the pride and glory of the forest, whether we consider the dignity of its station, or the variety of uses to which it is applied. Being a native of our island, it adapts itself in a wonderful manner to almost every soil, and, if well defended in its infancy, there are few places in which it will not grow to a national advantage. The Oak naturally delights in a rich, deep, and loamy soil; but lands of that quality are now more profitably employed in pasture and tillage. However, there are large portions of land in this kingdom which yield but a small profit to the owners. Such wastes, if situated near rivers, or navigable canals, are nobly calculated for raising Oaks which, at some distant period, may launch themselves into the Ocean, Guardians of Liberty and Commerce. Of the Oak there are various species, and Mr. Miller, in the last edition of his Dictionary, has described no less than seventeen kinds.

former, as the smaller particles are by the wind and rains brought, from time to time, from the high grounds to the lower. It is on the hilly grounds we make our plantations, which in time will make the vallies of much greater value, on account of the shelter they will afford.

"After his Grace has fixed on such a part of this Forest-land as he intends to have planted, some well-situated valley is chosen (as near the center of the intended plantations as may be) for the purpose of a nursery; if this valley is surrounded with hills on all sides but the south, so much the better. After having allotted a piece of ground consisting of as many acres as is convenient for the purpose, it is fenced about in such a manner as to keep out all obnoxious animals. At either end of the nursery are large boarded gates, as also a walk down the middle, wide enough to admit carriages to go through, which we find exceedingly convenient when we remove the young trees from thence to the plantations. After the fence is completed, the whole is trenched (except the walk in the middle) about twenty inches deep, which work may be done for about three pounds ten shillings, or four pounds, per acre, according as the land is more or less gravelly; this work is best done in the spring, when the planting season is over. If after the trenching two or three chaldrons of lime be laid on an acre, the land will produce an excellent crop either of cabbages or turnips, which being eaten off by the sheep in the autumn, will make the land in fine order for all sorts of tree-feeds: But as the Oak is the sort of tree we cultivate in general, I shall confine myself particularly to our present method of raising and managing that most valuable species. In the autumn after the cabbages or turnips are eaten off, the ground will require nothing more than a common digging. So soon as the acorns fall, after being provided with a good quantity, we sow them in the following manner: Draw drills with a hoe in the same manner as is practised for pease, and sow the acorns therein so thick as nearly to touch each other, and leave the space of one foot between row and row, and between every fifth row leave the space of two feet for the alleys. While the acorns are in the ground great care must be taken to keep them from vermin, which would very often make great havock amongst the beds, if not timely prevented. Let this caution serve for most other sorts of tree-feeds.

"After the acorns are come up, the beds will require only to be kept clean from weeds till they want thinning; and as the

the plants frequently grow more in one wet season, where the soil is tolerably good, than in two dry ones, where the soil is but indifferent, the time for doing this is best ascertained by observing when the tops of the rows meet. Our rule is to thin them then, which we do by taking away one row on each side the middlemost, which leaves the remaining three rows the same distance apart as the breadth of the alleys. In taking up these rows we ought to be anxiously careful neither to injure the roots of the plants removed, nor of those left on each side. The rest of the young Oaks being now left in rows at two feet apart, we let them again stand till their tops meet; then take up every other row, and leave the rest in rows four feet asunder, till they arrive to the height of about five feet, which is full as large a size as we ever wish to plant. In taking up the two last sizes, our method is to dig a trench at the end of each row full two feet deep, then undermine the plants, and let them fall into the trench with their roots entire.

“ And here let me observe, that much, very much, of their future success depends on this point of their being well taken up. I declare that I should form greater hopes from one hundred plants well taken up and planted, than from ten times that number taken up and planted in a random manner; besides, the loss of the plants makes the worst method the most expensive.

“ But before I leave this account of our method of raising Oaks, I shall just beg leave to observe, that we are not very particular in the choice of acorns; in my own opinion it matters not from what sort of tree the acorns are gathered, provided they are good; for although there seems to be a variety of the English Oak, in respect to the form of the leaf and fruit, also their coming into leaf at different seasons, with some other marks of distinction, yet I am of an opinion that they will all make good timber-trees if properly managed: It is natural to suppose that a tree will grow low and spreading in a hedge-row; on the contrary, it is very improbable that many should grow so in a thick wood, where, in general, they draw one another up straight and tall. And I have observed that the same distinctions hold good amongst our large timber-trees in the woods, as in the low-spreading Oaks in the hedge-rows.

“ Though I have not as yet taken notice of any other sort of tree but the Oak, yet we have a great regard for, and raise great quantities of Beech, Larch, Spanish Chesnut, Weymouth Pine, and all sorts of Firs, the Scotch excepted, as well as many other kinds, by way of thickening the plantations while young; amongst which the Birch has hitherto been in

the greatest estimation, it being a quick-growing tree, and taking the lead of most other sorts on our poor forest hills; and as we have an inexhaustible spring of them in the woods, where they rise of themselves in abundance from seed, we at all times plant them plentifully of different sizes. As to the Elm and Ash, we plant but few of them on the forest, though we raise great quantities of both, but particularly the Ash, which being an useful wood (but a bad neighbour amongst the Oaks) we plant in places apart by itself. I shall dismiss this subject concerning the management of our nurseries, after saying a word or two relating to pruning: We go over the whole of the young trees in the nursery every winter; but in this we do little more than shorten the strong side-shoots, and take off one of all such as have double leads.

" Having thus pointed out the mode of forming and managing our nurseries, I shall now proceed to the plantations. The size of the plantations, at first beginning, must be in proportion to the stock of young trees in the nursery; for to undertake to plant more ground than we have young trees to go through with for thick plantations, would turn to poor account on the Forest-hills. We always plant thick, as well as sow plentifully at the same time, provided it be a season in which acorns can be had; so that all our plantations answer in a few years as nurseries to succeeding plantations.

" As to the form of the plantations, they are very irregular; we sometimes follow a chain of hills to a very great distance; so that what we plant in one season, which perhaps is sixty, eighty, and sometimes an hundred acres, is no more than a part of one great design.

" If the ground intended to be planted has not already been got into order for that purpose, it should be fenced about at least a twelvemonth before it is wanted to plant on, and immediately got into order for a crop of turnips; two chaldrons of lime being laid on an acre will be of great service, as it will not only be a means of procuring a better crop of turnips, but will bind the land afterwards, and make it fall heavy, which is of great use when it comes to be planted, as some of the Forest-land is so exceeding light as to be liable to be blown from the roots of the young trees after planting: Therefore we find it to be in the best order for planting about two years after it has been plowed up from pasture, before the turf is too far gone to a state of decay. It will be necessary to have a part of the turnips eaten off soon in the autumn, in order to get the ground in readiness for early planting; for we find the forward planting generally succeeds the best.

" After

"After the turnips are eaten off, we plow the ground with a double-furrow trenching plough made for that purpose, which, drawn by six horses, turns up the ground completely to the depth of twelve or thirteen inches: This deep ploughing is of great service to the plants at the first, and also saves a great deal of trouble in making the holes. After the ploughing is finished, we divide the ground into quarters for the planting by ridings. It will be a difficult matter to describe the laying out the ground for this purpose, especially where there is such a variety of land as we have on the Forest; much depends on the taste of the person employed in this office. Between the hills, towards the outsides of the plantations, we frequently leave the ridings from sixty to an hundred yards in breadth, and contract them towards the middle of the woods, to the breadth of ten or twelve yards; and on the tops of the hills where there are plains, we frequently leave lawns of an acre or two, which make a pleasing variety.

"In some of them we plant Cedar of Libanus at good distances, so as to form irregular groves; and this sort of tree seems to thrive to admiration on the Forest-land. On the outsides of the woods, next to the ridings, we plant Evergreens, as Hollies, Laurels, Yews, Junipers, &c. and these we dispose of in patches, sometimes the several sorts entire, at other times we intermix them for variety; but not so as to make a regular screen or edging. Our design in the distribution of these plants, is to make the outsides of the woods appear as if scalloped with Evergreens intermixed sometimes with rare trees, *Liriodendron Tulipifera*, or Virginian Tulip-tree; &c.

"After the ground is laid out into quarters for planting, we assign certain parts to Beech, Larch, Spanish Chestnuts, &c. These we plant in irregular patches here and there, throughout the plantations, which, when the trees are in leaf, have the most pleasing effect, on account of the diversity of shades; especially in such parts of the Forest where, four, five, and sometimes more of the large hill-points meet in the same valley, and tend, as it were, to the same center.

"After those patches are planted, or marked out for that purpose, we then proceed to the planting in general. We always begin with planting the largest young trees of every sort, and end our work with those of the smallest size; were we to proceed otherwise, the making a hole for a larger sized tree, after the small ones are thick planted, would cause the greatest confusion.

"Birch is generally the sort of tree we make our beginning with, which we find will bear to be removed with great safety,

at the height of six or seven feet, though we commonly plant rather under than at that size. This sort of tree we are always supplied with from our plantations of five or six years growth. But before I proceed to the taking them up, it will be proper to inform you, that in the planting season we divide our hands into four classes, which we term takers-up, pruners, carriers, and planters: And here I shall describe the several methods of doing this work.

"First, in taking up we have the same care to take up with good roots in the plantations, as was recommended in the nursery, though we cannot pursue the same method; but in both places, so soon as the plants are taken up, we bed them in the ground in the following manner: Dig a trench at least fifteen inches deep, and set the young trees therein with their tops asslant, covering their roots well as we go along, and almost half way up the stem of the plants, with the earth that comes out of a second trench, which we fill in the like manner, and so proceed on till we have a load more or less in a heap, as may be convenient to the place from whence they were taken. In our light soil this trouble is but little, and we always have our plants secure, both from their roots drying, and their suffering by frost. We have a low-wheeled waggon to carry them from the heaps, where they are bedded, to the pruners, and generally take two loads every other day. When they arrive, the planters, pruners, &c. all assist to bed them there, in the same manner as before described. We have a portable shed for the pruners to work under, which is also convenient for the rest of the work people to take shelter under in stormy weather. From the above heaps the plants are taken only so fast as they are wanted for pruning, which work we thus perform: Cut off all the branches close to the stem to about half the height of the plant, shortening the rest of the top to a conical form in proportion to the size of the plant; and in pruning of the roots, we only cut off the extreme parts that have been bruised by the taking up, or such as have been damaged by accident, wishing at all times to plant with as much root as can be had.

"As soon as they are pruned they are taken to the planters, by the carriers, who are generally a set of boys, with some of the worst of the labourers. The planters go in pairs; one makes the holes, and the other sets and treads the plants fast, which work they commonly do by turns. In making of the holes we always take care to throw out all the bad soil that comes from the bottom; if the planting be on the side of a hill, we
lay

lay the bad soil on the lower side of the hole, so as to form a kind of basin; for without this care our plants would lose the advantage of such rains as fall hastily. We at all times make the holes sufficiently large, which is done with great ease after our deep ploughing.

"Before we set the plant, we throw a few spadefuls of the top soil into the hole, setting the plant thereon with its top rather inclining to the west; then fill up the hole with the best top soil, taking care that it closes well with the roots, leaving no part hollow. When the hole is well filled up, one of the planters treads and fastens the tree firmly with his feet, while his partner proceeds to make the next hole.

"The fastening a tree well is a material article in planting; for if it once becomes loose, the continual motion which the wind occasions, is sure to destroy the fibres as fast as they are produced, which must end in the destruction of the plant, if not prevented. It is to guard against this inconveniency that we take off so much of the top, as has been described in the article of pruning.

"We plant about three or four hundred Birches of the large size on an acre, and nearly the same number of the first-sized Oaks; we also plant here and there a Beech, Larch, Spanish Chestnut, &c. exclusive of the patches of the said sorts of trees before planted. We then proceed to plant plentifully of the second and lesser-sized Oaks; and last of all a great number of the small Birches, which are procured from the woods at about three shillings or three shillings and six-pence per thousand: These we remove to the succeeding plantations after the term of five or six years. Of the several sizes of the different kinds of trees we generally plant upwards of two thousand plants upon an acre of land, all in an irregular manner.

"After the planting is finished, we then sow the acorns (provided it be a season that they can be had) all over the plantation, except amongst the Beech, Larch, &c. in the aforesaid patches. Great care should be taken to preserve the acorns intended for this purpose, as they are very subject to sprout, especially soon after gathering; the best method is to lay them thin in a dry airy place, and give them frequent turnings. We sow these acorns in short drills of about a foot in length, which work is done very readily by two men, one with the acorns, the other with a hoe for the purpose of making the drills and covering the seed,

"We are of opinion that the plants produced from these acorns will at last make the best trees; however, I will not pretend

pretend to say how that may be, as the Oaks transplanted small, grow equally well for a number of years: But it is probable that a tree with its tap-root undisturbed, may, in the end, grow to a much larger size.

"After the whole is finished to a convenient distance round the pruners, we then remove their shed to a second station, and there proceed in the like manner; and so on till the whole be finished.

"It would be well to get the planting done by the end of February, especially for trees of the deciduous kind; but from the disappointments we meet with, occasioned by the weather, we are sometimes detained to a later season.

"I have several times made trial of twelve or fourteen kinds of American Oaks sent over to his Grace in great quantities. I sowed them in the nursery, and also in the best and most sheltered parts of the plantations. In both places they come up very plentifully; but I now find that several of the sorts will not stand the severity of our winters, and those that do, make so small a progress as to promise no other encouragement than to be kept as curiosities.

"Towards the end of April, when the ground is moist, it will be of great service to go over the whole plantations, and fasten all such trees as are become loose since their planting: After this, nothing more will be required till the month of June, when we again go over the whole with hoes, cutting off only the tall growing weeds; for the sooner the ground gets covered with grass, in our light soil, so much the better.

"I own there is something slovenly in the appearance of this method, and on some lands I would recommend keeping the ground clean hoed for some time at first, as also planting in rows, which in that case would be necessary. More than once I have tried this method on our Forest-hills, and always found, after every hoeing, that the soil was taken away by the succeeding winds into the valleys.

"Besides this inconvenience, the reflection of our sandy soil is so very great, that we find the plants stand a dry season much better in our present method, than in the former: And whoever fancies that grass will choak and destroy seedling Oaks, will, after a few years trial, find himself agreeably mistaken: I have even recommended the sowing the poorer parts of the hills with furze or whin-seed, as soon as they are planted: We have sometimes permitted the furze to grow in the plantations by way of shelter for the game, which though it seems to choak and over-grow the Oak for some time, yet after a few years we commonly find the best plants in the strongest beds
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of whins. This shews how acceptable shelter is to the Oak whilst young; and experience shews us that the Oak would make but a slow progress on the Forest-hills for a number of years at first, were it not for some kind nurseries; and the Birch seems to answer that purpose the best, as I have already observed.

"The several sorts of Fir-trees, from appearance, seem to promise a great shelter; but on the Forest-land they do not grow so fast as the former, and what is worse, the Oak will not thrive under them, as they do immediately under the Birch.

"Where a plantation is on a plain, a screen of Firs for its boundary is of singular use, but the situation of the Forest-land denies us this advantage.

"We continue to cut down the tall-growing weeds two or three times the first summer, and perhaps once the next, or second season after planting; which is all that we do in respect to cleaning. The next winter after planting, we fill up the places with fresh plants where they have miscarried; after which there is little to be done till about the fourth or fifth year; by which time the small-sized Birch, and seedling Oaks, will be grown to a proper size for transplanting: In the thinning of these, due care must be had not to take too many away in one season, but, being properly managed, there will be a supply of plants for at least half a dozen years to come.

"About the same time that the lesser-sized Birch wants thinning, the large ones will require to have their lower branches taken off, so as to keep them from injuring the Oaks; and this is the first profit of our plantations, the Birch-wood being readily bought up by the broom-makers. This pruning we continue as often as required, till the Birches are grown to a sufficient size to make rails for fencing; we then cut them down to make room for their betters.

"By this time the Oaks will be grown to the height of twelve or fourteen feet, when they draw themselves up exceedingly fast: Each plant seems as it were in a state of strife with its neighbour, and in a strict sense they are so, and on no other terms than life for life; and he whose fate it is to be once over-topped, is soon after compelled to give up the contest for ever.

"After the Birches are cut down there is nothing more to be done but thinning the Oaks, from time to time, as may be required, and cutting off their dead branches as frequently as may be necessary. We are very cautious in doing the former, knowing well that if we can but once obtain length of timber,

timber, time will bring it into thickness, therefore we let them grow very close together for the first fifty years.

"And here it may not be improper to observe the progress the Oak makes with us, by describing them in two of our plantations, one of twenty-eight, the other of fifty years growth. In the former they are in general about twenty-five or twenty-six feet in height, and in girth about eighteen inches: The trees in the latter, planted in 1725, are something more than sixty feet in height, and in girth a little above three feet; and these trees are in general about fifty feet in the bole, from which you will easily conceive the smallness of their tops, even at this age.

"It would be a difficult matter to describe their farther progress with any degree of certainty, therefore let it suffice to make this last observation on them in their mature state.

"I should have before observed to you, that in both the aforesaid, as well as in all the young plantations, the Spanish Chestnut keeps an equal pace, or rather out-grows the Oak; but it is doubtful whether ever they will arrive at the same size; for the largest of our Spanish Chestnuts, which have much the appearance of old trees, do not girth more than twelve or fourteen feet, which is nothing in comparison to some of our large Oaks, which girth from twenty-five to thirty feet; indeed some of them a great deal more: For instance, that remarkable tree called the Greendale Oak, (from its growing in a valley of that name near Welbeck) which in the year 1724 had a hole cut through its body large enough to admit a coach to go through. This great curiosity is yet living, and frequently bears acorns, which we carefully save, to be distributed as presents amongst his Grace's acquaintance.

"Notwithstanding the uncommon size of the lower part of this tree, it has never contained any great quantity of timber; I mean in comparison with several of our largest Oaks, some of which contain, in their tower-like trunks, between seven and eight hundred solid feet of timber, exclusive of their stately tops; and some of their large branches are even like trees themselves.

"You see, sir, what a surprizing mass of wood may arise from a single acorn! Indeed it is really wonderful to see, on some soils, to what an amazing size this king of trees will sometimes arrive."

WELBECK, June 16, 1775.

ART.

ART. V. *On the Culture of Saffron.*

To the EDITOR of the FARMER'S MAGAZINE.

SIR,

AS your work is calculated for the circulation of useful knowledge, I herewith send you some observations on the culture of saffron, as practised in our neighbourhood, where great quantities of that plant are annually raised. As I have not inserted any thing in this account but what may be depended on, your inserting it in your next number may prove beneficial to some of your readers, and oblige.

SAFFRON-WALDEN,

July 18, 1777.

Your very humble servant,

A LAND-OWNER.

Saffron is a production of this country, which is universally acknowledged to be superior in its medicinal qualities to any that is raised elsewhere. It is somewhat uncertain when, and from whence it was first introduced; but it has flourished here for many ages, and gave birth to the name of this town. It is of the *Crocus* kind, the root bulbous, and about the size of a nutmeg, covered with a brown coarse network skin. The flowers spring from the upper part of the root with the leaves, the tops of which only appear. The tube of the flower is very long, springing from the bulb without any footstalk, divided into six equal obtuse segments of a purple blue colour. In the bottom of the tube is a round gemmæ supporting a slender style not more than half the height of the petals, surmounted by three oblong golden stigmas, or chives, which are properly the saffron, the only useful part of the plant, and for the sake of which it is so carefully cultivated. In respect to the soil, a dry hazel mould upon a chalk bottom is esteemed the best; but experience hath shown, that with proper tillage it will grow very well in any loose sandy soil. We always plant it on a fallow, and about the end of March, or the beginning of April, the ground is well ploughed; that is, both closer and deeper than for any sort of corn. In the month of May, the usual practice is to lay from twenty to thirty loads of rotten dung on an acre, and to plough it well in, so that it may be thoroughly mixed with the mould. And this is the

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* Mr. Bradley, who was an experienced gardener, declares against dung. He observes, that it is injurious to all bulbous rooted plants, and that custom only supports that practice against reason. Inequality of light us to make this remark, although it is not intended to lessen the reputation which is justly due to our ingenious countryman, for which he has our sincere thanks, and his future favours will at all times be acceptable.

they plough for the third time, and at the distance of every perch, leave a deep furrow open to receive the weeds. The land is then well fenced in to keep out all kinds of beasts, and especially hares.

When things are thus prepared, a man with a spit shovel cuts a trench about three inches deep, and is followed by two women who set the bulbs flat on their bottoms, about three inches distant, till the whole is complete. The man then opens a second trench at a small distance, and with the earth that comes out of it covers the roots in the first, and in this manner they proceed till the whole spot is planted. The quantity of roots required for this purpose may be sixteen quarters, (128 bushels) to an acre, which, according to the accurate Dr. Douglass's computation is 392,040 plants. Some of the roots are sharp at both ends; these we call spickets, and never plant them because they do not flower.

About the beginning of September, we pare the ground with a sharp hoe between the ridges, and bury the weeds in the deep furrows. In the month of October, when the flowers appear, a sufficient number of hands are employed in different parts of the field, in pulling and putting them into baskets. This is performed early in the morning, and their work is commonly over by ten o'clock. These baskets of flowers being carried home with the greatest expedition, they very carefully pick out from every flower the filaments and part of the style, which when collected in a sufficient quantity is immediately dried on a small kiln prepared for that purpose. This is a very nice operation, as on the accurate performance thereof depends in a great measure the excellence of the saffron. The harvest, that is the pulling the flowers every morning, lasts about a month, during which, the same labour is constantly repeated, with the same diligence and attention.

We have three crops from the same spot, that is, a crop in each for three successive summers, the first much smaller in comparison than the two last. The first crop is uncertain, but it is esteemed the finest; sometimes it amounts to ten pounds of wet saffron. The second, in a good season, will yield fifty or sixty pounds, the third seventy or eighty, and sometimes more. In the first three weeks, five pounds of wet will produce one of dry saffron, but during the last week it will require six. When the saffron is properly dried on the kiln it appears of a rich orange colour, is moist to the touch, has an odorous smell, and a quick pungent taste, which dwells long on the palate.

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When the crops have been taken, the roots are to be raised out of the ground, and having lain three weeks, are ready to be sold or transplanted the next season into another piece of ground, as we never plant twice on the same without an interval of some years. After the saffron, we sow barley, and for some years have very great crops. We seldom let less than one, or more than three acres of saffron in the same field.

In respect to the profits attending this culture, they are uncertain: The very high price that this commodity sometimes bears, has made it, generally speaking, over-rated. It is very difficult to come at any exact calculation of the expences and the produce. A probable computation however, sufficient for our purpose, may be, and has been obtained. The annual value of clean saleable saffron upon an acre, which is taken by dividing the sum of all the crops by three, amounts to about thirteen pounds, of which eight goes towards the discharge of rent, and the expences that necessarily attend the crop, and the other five goes into the pocket of the proprietor: The account is thus made up; the first year ten pounds of wet, which will make two pounds of dry; the second about ten, and the third about fourteen; in all twenty-six pounds in three years. In regard to the price, it fluctuates between one pound sterling, and four, or five at most; at the more equal and middle price of thirty shillings, this comes to thirty-nine pounds, or thirteen pounds a year; and the whole expences from the first ploughing are near twenty-four pounds, so that there is fifteen pounds left for the three years profit. It is evident from the foregoing remarks, that saffron might be planted in many places, though perhaps in smaller spots, throughout this kingdom. As the cultivation of it employs a great number of people, though but for a short space of time, a person who had a small plantation and a large family, would hire but few hands, and of course lessen the expence. It is evident that the high price of our saffron is a great bar to its consumption, as well as temptation to adulterating it with Spanish saffron, which may be bought at a low rate, but it is very inferior to ours in quality. If as conveniency offered it was cultivated in any light land, in spots of an acre or less, the expence would not be so heavy, and the saffron would be better picked, more carefully dried, and from the emulation which must necessarily arise among a number of competitors for the sale of the respective proportions of the same commodity, be improving in every respect, while from the reduction

of expenses, the profits to individuals would be as great, even if the average prices were only twenty-five shillings per pound.

ART. VI. *Experiment of Sea Ouze as a Manure.*

Mr. Forster,

HAVING observed in your Magazine an account of many different kinds of manure, I take the liberty of sending you an account of an experiment tried with great success some years since by Sir John Turner, a gentleman of this neighbourhood, who is an excellent Farmer. The neighbourhood of the sea to this gentleman's estate, suggested to him the thought of a manure, which had totally escaped the notice of his neighbours; it was that of sea ouze. Some of his tenants occupied a considerable tract of arable land, that joins to the marshes by the shore: He directed one of them to ouze a small field, at the rate of fifty loads per acre, in the same manner as if it was marle, and to sow it with turnips. No effect appeared in that crop, but in the barley that followed, the richness of the manure shewed itself strongly: It yielded four loads and a half per acre in the straw, the crop between six and seven quarters: The clover was uncommonly fine, and the wheat which followed, the same; and the land ever since has displayed in the clearest manner, the vast fertility it has gained by this manure. The tenant on seeing the first crop of barley immediately went to work again, and ouz'd another field much larger; and since that time he has been as regularly at it as any one can be at marling. He has already manured a large space of land, and continues the improvement. Several of his fields thus managed he has at four shillings an acre, and others at six or eight, which are covered with as fine crops of turnips, clover, and barley, as can be seen in Norfolk; he has no barley on ouzed land that yields less than five quarters per acre, and he gets three quarters an acre of wheat, on four shilling land.

If this experiment should be tried by any Farmers who live near the sea-coast, there is the greatest probability of its answering their purpose better than any other manure they may be able to procure.

Near Snettisham,
NORFOLK,
June 28, 1777.

I am, Sir, your constant reader,
PETER GEDGE.

ART.

ARTICLE VII.

To the EDITOR of the FARMER'S MAGAZINE.

SIR,

AS I wish to render you all the service in my power in your laudable undertaking, I send you the following observations on the management of wet meadow, and dry pasture lands, which you are at liberty to make what use you please of.

Huntingdonshire,
July 20, 1777.

I am, sir, your most humble servant,
JAMES RAY.

The first step to improvement is a thorough knowledge of the nature of the soil proposed to be improved; to which, not only your mode of improvement must be adapted, or you will miss of success.

Good water meadow land is very valuable, especially in dry summers, when the crops on dry meadows run short and thin, as water meadow has generally a good burthen; although it is often coarse, and not near so nourishing as good dry meadow.

To lay out a water meadow well at first, requires some judgment; it should be so contrived that every part of the field should be equally watered, at least as nearly as may be. The water should be kept constantly running, so that when you think proper to stop it, it may run clear off, and leave every part dry; for if it stagnates in any part, it rots the sod, kills the grass, and produces only rank and unwholesome weeds.

The work consists of two sorts of canals, or cuts, the one is called carriages, the other drains. The largest or master carriage receives the water from the river, ditch, spring, or reservoir, and conveys it to the lesser carriages, which should be properly disposed all over the ground, into which are cut shallow notches to let out the water, by which means every part of the field is supplied. The master carriage is cut through the highest part of the meadow, and the smaller ones through the next highest, and the drawings are cut in the lowest parts, to drain off the superfluous water, and convey it into the master drawing, which is a large deep ditch, that communicates with the river, or some drain below, that carries the water quite away.

Water from hasty rains and floods, are the most beneficial, as they contain a great deal of fertilizing sediment, which being left on the land enriches it very much.

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The usual and best method is to mow these meadows, and make hay, and then, if you can easily give them a flash or two of water as soon as the hay is carried off, it will make the grain grow fast. In August, turn in your cattle to eat it clean off, be then careful to have your carriages and troughs properly cleansed against winter: This should not be deferred longer than November, as the benefit of the first high waters will much enrich them; and if they happen to be overflowed when there come severe frosts in the winter, or sharp cutting winds in the spring, the grass will be a great deal the forwarder: In the month of March, or sooner if you judge it convenient, cut up the rank weeds before the grass gets too high, such as docks, thistles, &c. for if they are suffered to scatter their seeds, you will soon have your land quite over-run with them, which will reduce your crop to half its value: You should mow your meadows before the grass is fully ripe, otherwise the bottoms will grow yellow, and contract a disagreeable rankness; you should also have it pretty well made, otherwise if you set up a pretty large rick, there will be danger of its firing; if a small one, it will turn musty and good for little. In hot scorching weather, hay is more apt to be under-made than in any other, as the outside will then appear very dry, though the inside is full of its native sap and moisture. I once set up a rick of sixty-three tons on the 24th of June, which was made in very hot weather, it stood until the 24th of August, and then one end of it burst out into a flame; notwithstanding I had an opening cut through the middle from top to bottom, full six feet wide, about a month before, and a large basket was drawn up through the middle of the rick when it was first made. It appeared very dry when put on the rick, but it had lain too little time to exhaust its sap, for grass from water meadows is very succulent and juicy if cut in in a good season, and if not thoroughly made, will ferment and take fire when put in large ricks.

I now come to the consideration of dry meadow, or pasture land, which if good, should never be broken up, because its natural herbage is better in quality, and of more value, than any other crop it can be planted with: Some of them however are spongy, and run much to rushes; to destroy which, various methods have been tried, as coal-ashes, marle, or other absorbent earth: These, however, are only temporary remedies; the most effectual one is, to drain the field, and render it dry and healthy: Coal-ashes, or foot, are then good dressings for such land, but in many places they cannot be had in sufficient quantities; therefore if you have a field
over-run

over-run with rushes, after draining it effectually, plough it deep in October, and in March following plant it with horse beans or large cabbage: The following spring lay it smooth and sow it with grass seeds.*

It often happens that meadow-land is over-run with moss, and then it bears little grass; this is the effect of poverty, brought on the land by ill husbandry: Indeed some land is so very rich and fertile, that it will bear mowing every year for a long time, but such land is not very common. The vegetable kingdom requires sustenance as well as the animal, or it will have but little vigor to bear a crop; its produce will be constantly dwindling until it becomes puny and weak. Such lands as are mossy will be greatly helped by drawing a heavy gate well bushed with black thorn bushes over them, in November or December, which will pull up and destroy a great deal of moss; then in January, lay on a good coat of dung, that the snow and rain may have time to carry it into the earth. It will do much more service laid on at this time than in the spring; for then the sun and wind exhales the nutritive juices of the dung, and leaves little more than dry straw. In April and May, you will see the good effects of such a dressing; the grass will come up thick, and fast, and appear with a fine healthy verdure.

This method of restoring decayed meadows, I know is different from that practised in many places, where they pare off the turf, and when dry burn it; the latter frequently produces a good crop for one year, but leaves the ground so perfectly exhausted that it yields little for some years after; whereas the method I recommend, after having tried both, is not only sufficiently advantageous the first year, but its benefits are sensibly felt for many years afterwards; and if repeated at proper intervals, the land will be continually improving.

After the dung is pretty equally spread, go over it again with the bushed gate, to divide and separate the lumps, that they may be the more readily washed into the soil; pick off the stones, and let no cattle feed upon it till March.

I have known some Farmers feed their meadows till May, but this is a very bad practice, for this greatly weakens and diminishes the crop, the spring shoot being the most vigorous and abundant. Besides, when fed so late, if a dry summer ensues, there being not blade enough to shade the root, it burns up, and the crop is often entirely lost, unless plenty of rain comes in time to save it.

Some

* We would rather recommend a fallow, or a turnip season.

Some people mow a second time upon rich land, but this also is a bad practice; surely it is of much more value to eat it in the field, as this benefits the land, but the other beggars it, and prevents a good crop the next year.

ART. VIII. *Of Soils proper for the nourishment of Plants; and Composts for forwarding their Growth.*

WHEN plants draw easily from the earth such aliment as is proper for their subsistence, they flourish and come to the greatest perfection. It is well known, that there is a circulation of sap in vegetables, in many respects like that of the blood in animals. It is therefore certain that they require a diet or nourishment; and in proportion as this nourishment is properly or improperly adapted to the fine sap vessels, the plant thrives, or proves dwarfish. The food of lands is loam, sand, clay, dung, or good rich mother earth, in their several sorts and degrees; for they have certain proportions of salts in them proper for the nourishment of every plant respectively. Flesh, fruit, and herbs, all contain salts of the same kind, altho' very different in quantity. One pound of flesh contains twice as many salts as the same weight of grain or seeds—and the latter, double the quantity that is found in herbs or grass. All these salts are proper to promote vegetation. Hence we find that straw, halm, litter, brakes, &c. are either buried in their rotten state, or burned, and the ashes used to enrich some soils. Fruits and grain, when rotten, will enrich land more than the former—and animal manure is still more efficacious. Carrion, leather, or the hair of animals, laid to the roots of plants have had surprizing effects.

On the other hand, in natural soils, loam, or mother earth appears to be the medium between sand and clay, and to partake of the qualities of both. All soils may be reduced under these three general heads, sand, loam, and clay; for all others, are composed of, or in some respect depend upon, these separately, or altogether. Gravels, and all the light open soils, till you come to loam, are of the sandy kind; and the binding earths, from loam downwards till we come to the stiffness of chalk itself, may be ranged with the clay kind.

All these soils are proper for vegetation in different degrees, and have their proper salts, but in different proportions. A peck of clay has perhaps twice as much salts in it as the same quantity of loam; and a peck of loam double the quantity that can be found in as much sand. Hence it may appear, at first view, that clay is the best soil to forward the growth of plants: whereas

whereas we know that sand will produce some kinds of them quicker than stiffer soils; but we will explain this paradox. Clay, whose parts are closely combined together, will not easily give out the salts contained in it; neither can the tender fibres of some plants make their way through it in search of nourishment: but if we open its parts by a mixture of sharp sand, or any other body of the like nature, we soon see the effects of its vigour.

Sand is apt to push forward the plants growing on it early in the spring, and will cause them to germinate near a month sooner than the same plants on a clayey bottom. The reason is, that the salts in sand are at full liberty to be put in motion upon the last approach of the sun's rays; but on this very account they are soon exhaled and lost. Both clay and sand have certain plants growing upon them, which are natural to those soils, and will thrive better on them than on any other. But all these plants will grow very well on a loamy soil, because they partake of the qualities of sand and clay, as grain doth of flesh and herbs, in respect to the food of animals.

Loam is of two kinds, black, and yellow; but experience shews that plants in general will grow in either far better than in any other soil. Hence it follows, that if by mixtures of natural earths, one with another, such a compost be made as the most nearly resembles loam in its texture and qualities, we might expect far greater success from it (especially in plantations of trees) than from any composition we can make with dung, or other forcing ingredients. For it is worthy remark, that animals, and vegetables also, are most healthy, and lasting when fed by simple and natural diet. It is true hot-beds, or other foreign means, would indeed forward the growth of trees as much in one year, as nature would in ten or twelve;* but we may be assured they can never last out half their usual time. Therefore in making plantations of trees (for timber especially) if we design them to be valuable, and lasting, let them be raised in fresh well opened earth of the loamy rather than the sandy kind. If the mould were sifted when they are planted young, it would greatly accelerate the striking and spreading of the tender fibres, and contribute much to their growth.

Equal quantities of sand and clay well mixed together seem the most likely to afford that desirable soil we seek after, where the natural loam or mother earth cannot easily be obtained. This has its greatest use in making new plantations, for we

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* Dr. Agricola of Ratisbonne many years since pretended by his artificial compost to raise forest trees 20 feet high in a few days time.

ought, then, always to examine the depth of the soil underneath, into which the trees are to extend their roots, and from whence they are to draw their chief nourishment. If we examine the ground whereon the most vigorous trees of every kind stand, and also the qualities, and depth of the soil they feed from, and plant accordingly, our labour will be amply repaid in the future vigour and quality of our plantations. But as some persons, who plant more for ornament than use, delight in the quick growth of their plantations, we will mention some mixtures which have been experienced to forward their growth.

If the soil be stiff and clayey let it be well broken and opened, of which take five loads—add to it an equal quantity of turf ashes: let these ingredients be well mixed together after they have lain one winter in a heap or ridge. This compost will forward the growth of young trees extremely.

Secondly, to five loads of stiff soil, broken and opened as above, add as much sharp sand, and half the quantity of ashes of burnt furze, gorse, or fern: let this be well mixed in October, and laid up in a ridge till February following, to be then screened for use. This is equally good for orchards or gardens.

Thirdly, one load of rotten wood, such as may be found under old wood piles, or for want of that, the same quantity of rotten leaves; to either of these a load of burnt grass turf, two loads of sand, and one load of clay, or stiff loam: this composition should be well mixed and laid in a ridge from October to February. It will not be improper to remark, that all these artificial soils should always be mixed in October, and screened just before you use them; for if prepared in the spring the sun's heat would soon exhale their volatile salts, and weeds would also rob them of their nourishment.

Fourthly, take a load of rape seeds after the oil is pressed from them, add two loads of sand, one of stiff soil, and one of burnt heath or grass turf: prepare them as before, and they will greatly forward the growth of plants.

Fifthly, take a load of malt grains, two loads of sand, and two of stiff soil, mix and prepare them as above directed, and they will make an admirable compost to hasten the growth of plants.

The dung of sheep and poultry mixed with clay, sand, and ashes as before directed, will also afford excellent manure for gardens.

These artificial soils may be made with a small expence, and will tend greatly to the lasting improvements of ground not naturally favourable to vegetation. The plants and flowers raised

raised in a garden thus enriched, will be far preferable to those produced from large quantities of rotten dung only; and the productions of a kitchen garden thus managed will be far more wholesome as well as palatable, the salts of animal dung being of a hot fiery nature, and in some degree communicating their pungent acrimonious quality to the juices of esculent plants, are very prejudicial to health, and often lay the foundation of diseases generally attributed to other causes.

ART. IX. *Directions for the Kitchen Garden in October.*

THE beginning or any time this month, plant some beans, for an early crop the end of May or beginning of June; the Mazagan sort is the best, and should be planted under a south wall or fence in rows across the border, about thirty inches asunder and three inches each from the other in the rows.

Sow some early hotspur pease for an early crop the first or second week, on a warm south border.

Plant the lettuces sown in the first week of September under frames or hand-glasses, for spring use; and an early summer crop should now be transplanted out for good in a warm situation sloping to the sun.

Plant the cauliflowers from the frames under hand-glasses.

About the middle or latter end of this month plant out a few early cabbages.

Earth up the brocoli plants with a hoe.

Thin the spinach and keep it clean from weeds by hand or hoe.

Tie up endive every week for blanching, if the weather and plants are dry.

Clear the beds of aromatic and other plants from weeds, and dung them or dig in the alleys, and throw the earth over them.

Prepare a bed to raise young mint in the winter.

Cut down the asparagus stalks and dress the beds with rotten dung from old cucumber and melon beds; clear the alleys and throw the earth over the beds; dress the seedling asparagus.

Earth up celery and cardoons, sow small salad herbs either in the open air under warm fences, or in frames.

Sow some radish seed for early spring use, sow also some carrot seed, which if they escape the frost will produce young carrots early in the spring.

Trench, dig, and dung foul unplanted ground, and lay it up in ridges for a winter fallow, laying all the weeds and rubbish at the bottom of the trenches.

ART. X. *Observations on Improvements in Agriculture, in a Letter to the Editor of the Farmer's Magazine.*

SIR,

AS a friend to your very useful work, I beg leave to send you a few thoughts on the various means of improving a country, which blessed by providence with internal resources of wealth, wants only the exertion of wisdom and industry, to render it the most happy and flourishing on the globe.

The real value and excellence of any country; depends on the favour of providence, and on the gifts bestowed thereby, which can by no means be acquired. But the improvement of these must flow from the sagacity and the labour of its inhabitants; the former is employed in procuring the means, and the latter in applying them with effect: These when united can accomplish almost every thing, but if divided, their force is greatly weakened. The artificial means, or instruments of improvement are of infinite consequence, they must be discovered by wisdom, prosecuted with caution, perfected by perseverance, and maintained and supported by an assiduous and unremitted attention. It was owing to the want of these, that the ample materials which the country furnishes, and would always have furnished, were in a great measure suffered to remain, some of them wholly unemployed, others imperfectly, and all of them in a degree much inferior to that capacity of contributing to our happiness which they derived from nature.

The different degrees of civilization amongst nations, arises from their having few or many of these means of improvement; next to the materials which are the natural stock of a country, these instruments of art are the most necessary to its inhabitants. The earth when till'd and sown, produces grain of several sorts: This grain produces flour or malt; flour makes bread, and some other kinds of food; malt is brewed into drink, and sometimes distilled into spirits; of these when we have a redundancy, we export and sell to people inhabiting other countries. The means used to improve our soil, so as to increase its products, the methods employed for their preservation, the skill shewn in manufacturing them, are arts some of them lately invented, and all of them gradually improved. Many causes concurred to hinder general improvement in former ages; the tyranny of the feudal system was one, the authority and rapaciousness of the popish clergy another, and the ignorance of those ages the third, and most prevalent.

prevalent. Our ancestors need not have been exposed to frequent famines, had they turned their attention more closely to husbandry, and reduced it to a science founded on general observation and experiment. Our black cattle might always have been of the same size they now are; our horses were ever capable of being what in this country we now see them; but security of property, and encouragement and attention were wanting. Some daring minds, however, penetrated through the gloom so early as the reign of Edward II. Treatises of husbandry were then written, but are long since lost; but among other things we know they recommended the use of marle. Fitzherbert shewed the utility of inclosing. Tusser's old rhymes, however uncouth to modern ears, were suited to the age in which he lived, and contained much good matter. Sir Thomas Chaloner, Blundeville, Googe, Sir Hugh Platt, and other ancient authors, have given proof in their writings that they had clear ideas of some that are deemed modern improvements. But we find, the wars in which this kingdom was almost continually engaged in the fourteenth, fifteenth, and sixteenth centuries, either with foreign powers, or those which sprung from civil discord, together with the bigotted superstitions of enthusiastic ages, put a stop to that improvement in agriculture which began to shew itself in the practice of individuals. When landed property was precarious, and the produce of industry liable to be hourly seized by domestic enemies, it damped the spirits of the Farmers, who sought only to gain a subsistence from day to day, as the absolute wants of nature required.

Add to this, that among a class of men naturally ignorant, and unskilled in speculative knowledge, there is a natural repugnance to new things, and this repugnance is in proportion to their novelty: A striking instance of this was apparent in the Norfolk Farmers, when the practice of setting wheat was first introduced there. The man who first practised this very excellent method, was for some years laughed at as a madman: At length his neighbours saw the manifest superiority of his crops; he had much more in quantity per acre than his neighbours, and the quality of his grain was far better. Repeated convictions of this, induced some of his neighbours to follow his example: They had equal success; and although it is not quite ten years since this mode was first practised, there are now very few Farmers in that large and opulent county who continue the old method of sowing wheat. The consequence is, that there is more and better wheat

wheat raised in that county, than on an equal space of ground in any other throughout the kingdom; and it is a fact, that the value of the seed saved by these means, is fully equal to the rent of all the wheat land in the county. What Farmer after being told this on good authority, but will immediately make the experiment? Surely they cannot want a more convincing motive to adopt a practice, which cannot possibly be attended with any loss or injury.

But to return, hence it is, that by degrees, and by a happy management of critical conjunctures, many things have been brought about, which at first met with great opposition. Men of quick parts, lively faculties, and deep penetration, are formed by nature for speculation. They arrange their ideas methodically, and combine their notions with facility, in proportion to the lights they possess: But they sometimes want leisure, sometimes stability, and frequently opportunities to carry their plans however well laid, into execution; yet this by no means destroys the value of such discoveries, and inventions, or the credit of the inventors, because the desire of contributing to the public good is highly laudable; and because without such intimations many of our most valuable improvements would never have been attempted, even by those who made them. New things are pleasing in the relation, but most people, and more especially those who cultivate land, are exceedingly wedded to old customs. In their beginning, all undertakings are difficult, more especially when carried on with reluctance; those obstacles are only to be overcome by the hopes of gain resulting from success. This by degrees establishes a new improvement, but does not always silence opposition. When the great advantages arising from the culture of Saintfoin, were incontestibly confirmed by experience, a clamour was raised, that this new improvement diminished the value, and consequently lowered the rent of meadow ground. Such idle clamours have not been confined to saintfoin. The amazing perfection to which the culture of turnips is arrived at in Norfolk, Suffolk, and Essex, have hitherto been ineffectual to induce the Farmers of many counties to copy after it. Strange it is, that these men should think this excellent root of no other value than as a little sheep feed in autumn: whereas would they but adopt the mode of hoeing them properly, their crops would prove treble their present value.

The entire demolition of feudal tenures, removed many of those impediments which had hindered the progress of agriculture,

agriculture, and the passing of those laws which rendered landed property certain, and clearly and intelligibly defined every species of possession, introduced a general spirit of improvement; agriculture began to be considered as a science, foreign grasses were introduced, and many improvements were attempted, though not till long afterwards brought to any tolerable degree of perfection. In consequence of this, and of the hopes excited, many good treatises were published, to shew what natural sources of wealth this country afforded. To the increase of knowledge succeeded an increase of activity to acquire those blessings which it pointed out, and many of our present Farmers easily attain what their predecessors thought was beyond the reach of human power to acquire; some of them with a spirit and industry peculiar to the present age, have sought out hidden treasures; and by the wisest application of improved means, have not only procured fortunes themselves, but opened sources of wealth to the community, and by that means diffused happiness over all the inferior ranks of the people: As improvements in husbandry increase, every class will be benefited; the poor by their constant employment, and the rich by the additional value of their estates.

But although very great improvements have taken place in most counties of this kingdom, still much remains to be done. We have vast tracts of forest, heath, fen, and sandy soil, most of which by good culture might be rendered as valuable as most other land in the kingdom. To promote so valuable a purpose, let your future labours be directed by a general communication of the means best adapted to that end. I am, sir, wishing you success in your laudable employment,
Hertfordshire,

Your very humble servant,

June 12.

JAMES GREEN.

THE HOUSEKEEPER'S DIRECTORY.

To pickle Melons.

TAKE your melons and scoop them clean from the pulp, then fill them with horse-raddish scraped, sliced garlick, ginger, nutmeg, white pepper, and mace, then take the best white-wine vinegar, a handful of salt, a nutmeg quartered, whole pepper, cloves, mace, and a or two race of ginger, boil the vinegar and spice together, and pour it boiling hot to the melons, afterwards pour them into pots, and stop them close down, and when they are cold cover them with a wet bladder and a piece of leather.

To

To pickle Mushrooms.

Take the small hard mushrooms, called buttons, cut off all the dirt from the stalks, wash them with water, and rub them clean with a flannel, then boil water and salt, when it boils, put in the mushrooms, and let them boil till they are white, then strain them through a cloth, and put them into cold water and salt for two or three days; changing it twice a day, after which, make a pickle of white-wine vinegar, sliced nutmeg, cloves and mace, ginger and pepper, put them in, and stop them close up in pots or glasses.

To pickle Onions.

Take small white onions, boil them in water and salt, strain them, let them cool in a cloth, make the pickle prescribed for mushrooms, and when it is cold, put them in, and cover them down, if your onions should murther, boil them over again, and scum off the dross well, then let them cool, and order them as before. You may also pickle cauliflowers in the same manner.

To make Mango of Large Cucumbers.

Scrape out the seeds and cores, and fill them with whole pepper, and other spice, and a clove of garlick, then tie them close, and put them into salt and water, twenty hours, after which, wipe them dry, boil as much vinegar with spice as will cover them, and pour it on scalding hot.

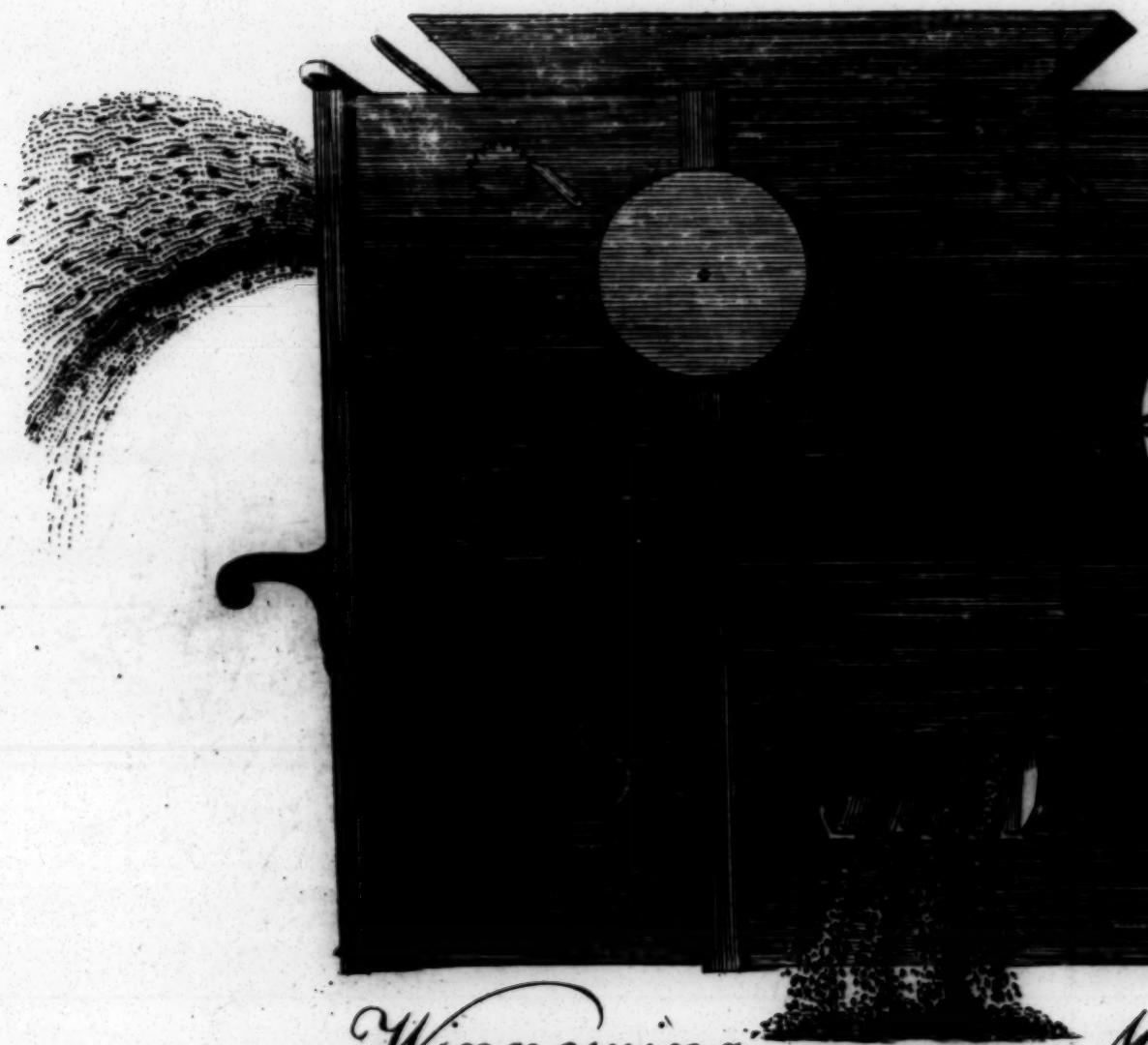
To pickle Samphire.

Pick it, and lay it in a strong brine of water and salt cold, and let it lie twenty-four hours, then make it boil once on a quick fire, and instantly pour it on the Samphire, after it has stood twenty-four hours, make it just boil again on a quick fire, and let it stand till cold, when it must be unstopt, and taken up to drain, when this is done, lay it in a pot, and let the pickle settle and cover it with the clear of it, let it be put in a cool dry place, and if the pickle muthers, boil it once a month, and when cold, put the samphire to it.

An excellent Way to pickle Pork.

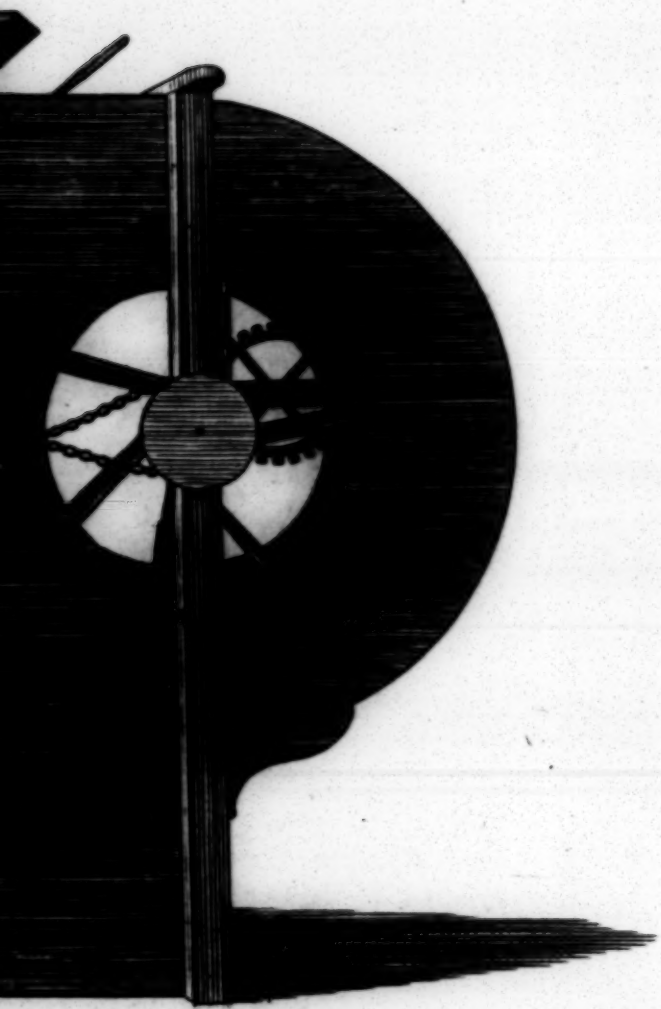
Take out the bones, cut it into pieces, and rub them with salt-petre, then take two parts of common salt, and one part of bay salt, and rub every piece well with it, after which, cover it with salt, and take a large strong powder tub, the narrower and deeper the better, and strew salt at the bottom of it, and lay the pieces as close as you can, strewing salt at the sides of the tub, and as it dissolves, throw in more, and it will keep good a long time.

[To be continued.]



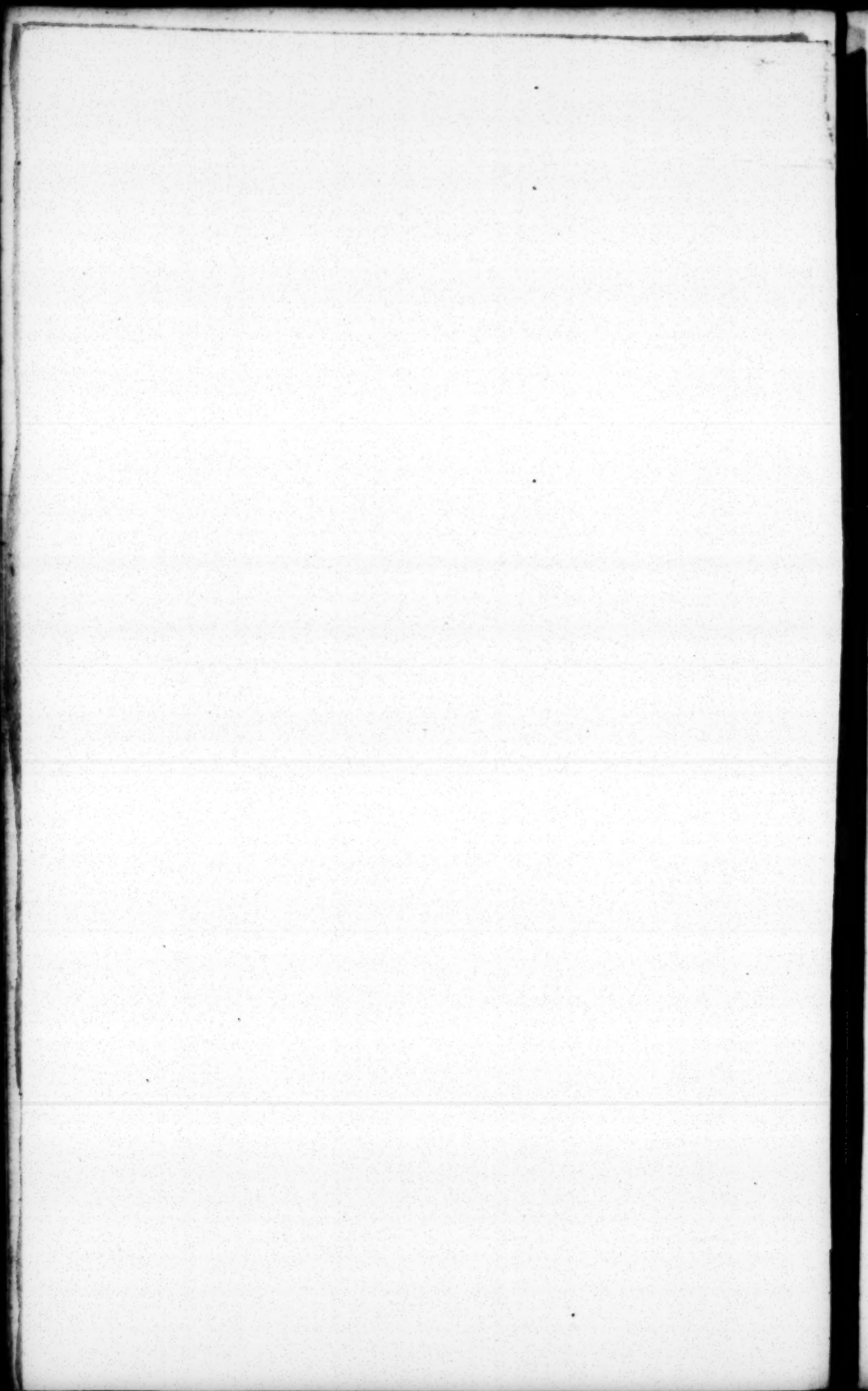
Winnowing

Made & Sold by James Sharp London



Machine
London

© Miles sculp. Borough



ART. XII. *Reference to the Winnowing Machine.*

THE pattern for this Machine I had from the ingenious Mr. Duckett of Peterham, being one presented to him by his Grace the Duke of Buccleugh.—It was much recommended by Mr. Duckett, as a useful machine, being an improvement upon that presented to the Society of Arts by Mr. Evers, in January 1761, an accurate Engraving of which may be seen in Mr. Wm. Bailey's description of useful Machines and Models, plate No. XX, Page 90.

Since it came into my hands, some useful alterations have been made, which render it more simple, and, perhaps as complete as it is capable of being made.

The wheat and chaff being thrown into the hopper, and the machine put in motion, it effectually separates the corn from every other mixture; the chaff and dust are blown out at the end, the ears of corn, sticks or stones are separated into different drawers, and the clean wheat comes out at the screen in front.

This machine is very proper for cleaning or airing corn in graineries or ships; is very expeditious, and the strength of a boy very sufficient to turn it.

JAMES SHARP.

ART. XIII. *The desperate case of an Hydrophobia, and method of cure.*

A Gentleman was bit by a mad dog just below the knee; the dog frothing greatly at the mouth caused the saliva to run down to his ancles; he applied for relief before any symptoms appeared, was advised to try the efficacy of the salt water, and directed to take the pulvis antilyssus cum moscho, and several other medicines were prescribed which proved ineffectual; for on the 16th of March following I was sent for, when I found him tied down in bed with strong cords, the passages of his throat quite closed, and, upon producing a basin of water, he became so convulsed, that he broke all the cords at one effort.

It is not in the power of language to describe this horrid scene. With the assistance of six strong men he was tied down a second time, when seemingly a more dismal scene appeared, of the last struggles of nature yielding up to the enemy.

I had only one experiment left, which if not successful, must be fatal; but before I put it into practice I weighed the danger of the trial against that of the disease, and found the danger outweighed it; and on this consideration it is not only reasonable, but merciful, to snatch an opportunity of doing good; at least, there is more humanity in such proceeding than in stifling a miserable wretch between two feather-beds; however, experiments of this kind are rather to be permitted than enjoined by physicians, though I am afraid, that in cases less dangerous than this, they are every day directed.

The passages of his throat being quite stopped up, prevented the administering a medicine inwardly; yet, notwithstanding, there was still a possibility (though a bare one) provided a method could be discovered to procure a nausea, so as to make him vomit, which would be the means of opening the passages of his throat to administer a medicine inwardly; but, on failure of it, the viscid matter would lodge in it and choak him.

In order to effect it, I caused his neck, throat, breast, and abdomen, to be embrocated with strong mercurial ointment, and after rubbing in an ounce and six drams, a nausea came on, and a most violent struggle ensued, and he began to vomit, but was rendered so weak that he could not discharge the glutinous matter that lodged in the throat, and was almost expiring; however, with great difficulty he expectorated it, and instantly he recovered; whereupon I gave him of native and factitious cinnabar twelve grains each, opium four grains, camphire eight grains, and mosch twelve grains, in a wine-glass of sack and brandy; before he had drank three-fourths of it, the passages of his throat closed up again, and the remainder bulged out of his mouth; however, what he had taken calmed his inquietude, and brought on a profuse sweat, and he slept eight hours, awaked much refreshed, the pulse stronger and quicker, but the passages of his throat still remained closed, whereupon I repeated my former treatment, which wrought well; for, after rubbing an ounce and two drachms of the same ointment, he began to cast up with greater ease than he did before, and parted with more than a pint of the poisonous matter that had settled about the præcordia, or part of the heart, when instantly I repeated the medicine a second time, which he swallowed, and it had the desired effect; for in less than an hour he fell into a sound and calm sleep, sweated plentifully, and in this situation remained for sixteen hours. When he awoke the symptoms were greatly abated, the passages of his throat open, but extremely sore, and very thirsty. I ordered it to be rubbed with sweet sallad oil, well camphorated, and laid on the part a mucilage plaister, and to quench his thirst, and preserve a diaphoresis, directed him to drink as much as he could of barley water, with nitre and hartshorn drops. The night following he slept well, the soreness of his throat greatly lessened, and his thirstiness abated. All symptoms of madness disappearing, the medicine was continued, but in a less quantity, for twelve days, when the gentleman was restored to his health.

Remark.—The leg I ordered to be rubbed with one drachm of mercurial ointment. On the 4th day a number of pustules appeared where the saliva had ran down, full of yellowish matter; within two days turned black and crusted; then dried, and fell off three days afterwards; the parts under became the natural colour of the skin, and every symptom disappeared.

Hatton-Garden, No. 109.

A. B.

ART. IX. Premiums offered by the London Society of Arts, &c. for Planting and Husbandry.

[Continued from p. 182.]

IMPROVING LAND LYING WASTE. For the best account of a method for improving any of the following soils, being land lying waste or uncultivated, viz. clay, loam, gravel, sand, chalk, limestone, moor, or peat-earth, and bog; verified by experiments on not less than ten acres of land, to be produced on or before the second Tuesday in December, 1777; the gold medal for each.

To the next in merit; the silver medal.

An account of the soil, manner of improvement, expence, and product, are required to be fully explained,

The same premiums are extended to the years 1777-8.

MANURES. To the person who shall give the most satisfactory account, verified by accurate experiments, on what soil the application of marle, chalk, lime, or clay, severally as manures, be most beneficial; the gold medal. It is required that each experiment be made on one acre, and that they be continued four years, the same crop being sown the same year on the several spots. An account of the nature of the soil, manure, and the quantity laid on, with all expences and crops, to be delivered, with specimens of the soil and manure, on or before the first Tuesday in January, 1780.

The same premium is extended two years further.

MANURES. For the most satisfactory set of experiments, to ascertain the comparative advantage of the following manures, used as top-dressings; viz. soot, coal-ashes, wood-ashes, lime, gypsum, night-soil; the gold medal. It is required, that not less than half an acre of land be appropriated to each manure, the soils similar, and lying near each other, and that the same crops be sown in the same year on each spot; the experiments to be continued not less than two years. An account of the nature of the soil, quantity, and expence of the manure and crops, with certificates, to be produced, on or before the first Tuesday in December, 1777.

The same premium is extended to the year 1779.

ROLLING OR SCARIFYING GRASS LAND. To the person who shall, by experiment, determine whether it is most beneficial to grass land, to roll it with a heavy roller, or to cut the surface two or more inches deep at small intervals, with an instrument commonly called a scarificator (which is similar to a harrow composed of coulter instead of tines); a bush harrow and light roller being afterwards drawn over the part of the field thus scarified; the gold medal.

It is required that the above experiment be made on natural grass, whether old or new, meadow or upland, provided the same has been laid down at least three years, and that the experiment be continued for four years at least. An account of the nature of the soil, weight of the roller, description of the scarificator, depth to which it cuts, and the comparative success of each method; to be delivered, on or before the first Tuesday in November, 1777.

The same premium is extended to the year 1780.

TO ASCERTAIN THE PROPER DEPTH OF PLOUGHING. To the person who shall give the most satisfactory account, verified by accurate experiments, in order to determine the most proper depth of ploughing on clay or strong land; fifty guineas.

It is required that all experiments be made on similar soils lying near each other, that each experiment shall consist of two acres at least, that the deepest ploughing be at least four inches deeper than the reputed staple of the land, or usual depth of ploughing, and that these experiments be continued during a course of six years, the same crops being sown the same year on the several spots. An account of the nature of the soil, different depths of ploughing, quantity of manure, (if any) laid on each spot, all expences and crops; to be delivered on or before the first Tuesday in January, 1778.

The same premium is extended to the year 1784.

N. B. If the above experiments be made on land, which has little or no fall, it is then required that the land be hollow-drained, at least twelve inches deeper than the deepest ploughing.

To the person who shall, by the like experiments, on the above-mentioned soils, determine the depth of ploughing most proper for land, intended to be laid down in grass for pasture; thirty guineas.

It is required that the ploughing, be continued with or without crops, during the space of two years at least before the land is laid in grass. An account of the nature of the soil, depths of ploughing, crops, (if any) and produce of the grass, whether mowed or fed during four years; to be delivered to the Society, on or before the first Tuesday in Jan. 1778.

ASCERTAINING THE BEST COURSE OF CROPS ON CLAY SOIL. To the person who shall give the most satisfactory account, verified by comparative experiments, in order to ascertain the course of crops, which with or without a fallow, shall, during the space of eight years, prove most profitable, and shall leave the land in the best state, on a clay soil; the gold medal, or fifty pounds. Such comparative experiments to be made, on three acres at least in each mode; the soil to be as contiguous and similar as possible. An account of the soil, management, and crops, to be delivered, on or before the first Tuesday in January, 1779.

The same premium is further extended; the accounts to be produced in January, 1780 and 86.

ASCERTAINING THE BEST COURSE OF CROPS ON A DEEP LOAM. The same premiums will be given on the like conditions, for similar comparative experiments on a deep loam.

COURSE OF CROPS ON LIGHT LAND. For the most satisfactory account, verified by experiments, made on a dry soil, in order to ascertain which of the two following courses of crops is most advantageous, viz.

1st Year Carrots,	1st Year Potatoes,
2d Year Barley,	2d Year Barley,
3d Year Clover,	3d Year Clover,
4th Year Wheat,	4th Year Wheat,

An account of the soils, culture, and produce of the several crops, and the particular application of the carrots and potatoes, to be produced, on or before the first Tuesday in December, 1779; the gold medal or 30l. —Not less than one acre to be appropriated to each course, and the soils to be similar, and as contiguous as possible.

The same premium is extended one year further.

COURSE OF CROPS ON STRONG LAND. For the most satisfactory account, verified by experiments, made on not less than five acres of clays or wet loams, to ascertain the advantage of the following course of crops, viz. First, beans drilled, on planted and hoed. Secondly, wheat; the gold medal, or twenty pounds. These

These experiments to be continued two courses or four years. Certificates, with an account of the soil, culture, and quantity of manure (if any) laid on, to be produced, on or before the last Tuesday in March, 1780.

N. B. The success of this course of crops, much depending on the land being kept entirely clean, it is expected that each crop of the beans be horse or hand-hoed, at least three times.

The same premium is extended two years further.

IMPROVING WASTE MOORS. For the improvement of the greatest number of acres of waste moor land, not less than one hundred; the gold medal.

It is required that the land before improvement be absolutely uncultivated, in a great measure useless, not let to any tenant, and without any building upon it, except cottages or huts. That in its improved state it shall be enclosed, cultivated, and divided into fields of not more than ten acres each, with buildings erected thereon sufficient for the use and residence of a tenant, and let on lease to one who occupies no other land.—Certificates of the number of acres, of the quality of the moor so improved; of the mode and expence of the improvement; the state it is in as to the proportion of grass to arable; the rent at which it is let; and that the inclosure is not effected by act of parliament; to be produced, on or before the first Tuesday in Feb. 1779.

The same premium will be given in the year 1780.

And in the years 1781, 2, and 3, a piece of plate of the value of one hundred pounds with a suitable inscription, will be given for the *Improvement of Waste Moors*.

POUGH TO CUT WATER FURROWS IN ARABLE LAND. For the best plough for cutting water furrows in arable land, the earth to be thrown up on one side only, and the draught not to exceed the power of four horses, or oxen; 20l. The ploughs to be produced to the Society on or before the first Tuesday in Jan. 1778.

DRILL PLOUGH. For the best drill plough for different seeds, being an improvement on those already in the possession of the society, or generally known; to be produced to the society on or before the first Tuesday in March, 1778; the gold medal, or 30l.

DRILL PLOUGH FOR HORSE BEANS. For the best drill plough for horse beans only, in three rows twelve inches asunder; to be produced to the society, on or before the first Tuesday in January, 1778; 20l.—The plough to be strong and cheap, no variation of depth or distance being required.

N. B. The plough being designed on strong land, to work on ridges; the horses must be harnessed abreast, and walk, in the furrows.

DRAIN PLOUGH. For the best plough for cutting drains at one stroke, to be drawn by not more than ten horses or oxen; the drain to be not more than two inches wide at bottom, and twelve at top, and not less than two feet deep; the gold medal, or 50l. The plough to be produced to the society, on or before the first Tuesday in January, 1778.

N. B. Strength and simplicity in the construction and cheapness of the machine, will be considered as parts of its merit.

DRILL PLOUGH FOR CARROTS. For the best drill for sowing carrot seed only, in three rows, one foot asunder, to be produced, on or before the first Tuesday in Jan. 1778; 30l.

MACHINE FOR WASHING ROOTS. For inventing a machine, by which carrots, potatoes, turnep-rooted cabbage, or other roots may be

be washed more expeditiously and cheaper than by any method now practised, twenty pounds.—The machine may be worked in stagnant as well as in running water. Simplicity and cheapness in the construction will be considered as principal parts of its merits; to be produced, on or before the third Tuesday in January, 1778.

MACHINE TO ANSWER THE PURPOSE OF REAPING OR MOWING CORN. For inventing a machine to answer the purpose of mowing or reaping wheat, rye, barley, oats, or beans, by which it may be done more expeditiously, and cheaper than by any now practised, provided it does not shed the corn or pulse, more than the methods in common practice, and that it lays the straw in such manner as may be easily gathered up for binding; the gold medal, or 30l. The machine, with certificates that at least three acres have been cut by it, to be produced to the society, on or before the second Tuesday in December, 1777. Simplicity and cheapness in the construction will be considered as principal parts of its merit.

The same premium is extended one year further.

MACHINE TO CONVEY WINTER CROPS. For inventing a machine or carriage for the purpose of conveying green winter crops off wet arable land, by which the work may be done cheaper, and with less poaching and injury to the land than by any method now practised; 20l. The machine or carriage to be produced to the society, on or before the second Tuesday in Jan. 1778.

Premiums in Chemistry and Mineralogy.

PRESERVING SEEDS OF VEGETABLES. For the best method of preserving the seeds of plants in a state fit for vegetation, after having been kept a considerable time, such method being superior to any known to the public and verified by sufficient trials; to be communicated to the society, on or before the first Tuesday in December, 1777; the gold medal.

DESTROYING SMOKE. For the best account, ascertained by proper experiments, of a method of destroying or burning the smok of fires belonging to steam engines, or other large works, in order to prevent annoyance to the neighbourhood; to be produced, on or before the first Tuesday in Feb. 1778; the gold medal or 20l.

BRICKS FOR MENDING ROADS. For the best contrivance of a furnace to burn bricks in the fields, where the clay for making them is found, and near the places where they are wanted for the purpose of mending roads; 20l.—A description and some model of the furnace to be produced to the society, on or before the last Tuesday in Nov. 1777.—Attention is to be had to simplicity, facility, and cheapness of construction, to the end that a number of such furnaces may locally be erected, with materials readily found to save charges and carriage.

The same premium is extended to the year 1778.

DISCHARGING STAINS OF GREASE FROM MARBLE. For discovering to the society an effectual method of discharging stains of grease from marble, without injuring the texture and colour of the stone; 20l. Accounts to be produced, on or before the second Tuesday in Jan. 1778.



By Order of the Society,
SAMUEL MORE, Secretary.

POETICAL ESSAYS.

A HUNTING SONG.

HARK the hills and dales resounding,
See the villagers surrounding,
At the hounds and horns reply.
Swift as light'ning see aspiring,
Hounds and hunters in full flight.
Woods and groves and grots retiring,
Hunting is the buck's delight.
View so fleet the hounds pursuing,
Reynard fault'ring out o'breath,
Vig'rous chace, his strength subduing,
In we break upon the death,
Joyous next with rosy lasses,
See around the social board,
Drinking sipping o'er full glasses,
All that hunting joys afford.

The HAPPY COUPLE.

THE Summer was over, my flocks
were all shorn,
My meadows were mow'd and I'd
hous'd all my corn,
Fair Phillida's cottage was just in my
view, [do.
A wooing I went—I had nought else to
On Flora's soft sofa together we sat.
And spent some long hours in amou-
rous chat;
I told her I lov'd her, and hop'd she
lov'd too,
Then kiss'd her sweet lips—I had nought
else to do.
She hung down her head and with
blushes reply'd,
I'll love you, but first you must make
me a bride:
Without hesitation I made her a vow,
To make her my wife—I had nought
else to do.
To the village in quest of a priest did
we roam,
By Fortune's decree the grave Don was
at home;
I gave him a fee to make one of us
two,
He married us then—he had nought
else to do.

E'er since we've been happy with peace
and content,
Nor tasted the sorrows of those who
repent;
Our neighbours all round us we love,
and 'tis true,
Each other beside!—when we've nought
else to do,
With Phœbus the toil of the day we
begin,
I shepherd my flock, While she sits
down to spin;
Our cares thus domestic we'll ard'ous
pursue,
And ever will love—when we've
nought else to do.

The FAITHFUL SHEPHERDS.

WHEN morn with purple streaks
the skies,
And rested flocks to pasture rise,
I long my absent love to see,
And sigh for him, who doats on me.
His lovely form and gracious smile,
First caught my partial eye.
And soft persuasion, free from guile,
Soon won me to comply.
Our vows of mutual truth are pass'd,
I only live to love,
And ever shall that passion last,
Which earth and heav'n approve.

The SUMMER DAY.

THE Sun in splendor rides supreme,
Along the azure road,
And darts to earth his fiercest beam
From his intense abode.
The labourer plies his hardy toil
Throughout the sultry day,
And stirs him o'er the parch'd-up soil,
To make the new mown hay.
The birds the open'd spray forego,
And seek the close grown hedge,
The kine within the waters low,
And crop the marshy sedge.
The traveller faints beneath the ray,
Fierce-darting o'er his head,

And



T H E
FARMER'S MAGAZINE.

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*A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]*

American Husbandry.

CAROLINA **I**NDIGO which forms a most essential branch
continued. of trade in Carolina, is a plant not unlike our
fern when grown, and is scarcely distinguish-
able from Lucerne grass when young, its leaves are pennated,
the flowers consist of five leaves, and are of the papilionaceous
kind, the uppermost petal being larger and rounder than the
rest, and lightly furrowed on the side; in the middle of the
flower is produced the stile, which afterwards becomes a seed
pod. They cultivate three sorts of indigo on different soils,
first the French or Hispaniola indigo, which has a long tap root,
requires a deep rich soil, and is principally cultivated in the in-
ternal parts of the country, which lie most southerly, being the
least hardy, and not well bearing the winters of Carolina to
the northward.

The second is the Bahama or false Gautimala, which bears
the winter better, is a stronger plant, and more fruitful, and
is capable of being cultivated on the worst soils in the country,
but is inferior to the first in quality of its dye. The third
sort is a native, and is consequently more cultivated than the
others.

The time of sowing their indigo is after the first rains which
succeed the vernal equinox: The seed is sown in drills about
eighteen or twenty inches apart, when it comes up it must be
carefully kept from weeds and worms; when full grown it is
about eighteen inches high, and when beginning to blossom it

is fit for cutting, which will be about the beginning of July: Towards the end of August they cut again, and about Michaelmas, if all things prosper, a third cutting is obtained: The general produce of each year is from forty to sixty pounds per acre, and a negro on an average can manage two acres of the plants, and finish the manufacture of the drug. In the cutting great care is requisite to preserve the farina of the plant, as great part of the beauty of the drug depends on that circumstance.

The apparatus for indigo though considerable, is not expensive, for besides a pump, the whole consists of vats and vessels of cypress wood, which the country itself produces: When cut, the plant is brought and laid in a large vat called a steeper, which is filled with water, and here left from twelve to sixteen hours, according to the weather, when it begins to ferment, swell, rise, and grow sensibly warm, to prevent its fermenting over the vat, pieces of wood are fixed to keep it down to its proper height; when the liquor begins to sink below the point, they suppose the fermentation to be arrived at its due pitch, and it begins to abate; the overseer then opens a cock, and lets off the liquor into another vessel, which they term the beater.

This liquor strongly impregnated with the particles of the indigo, they work and agitate about in the beater with wicker baskets without bottoms, and continue this agitation without ceasing till it froths, heats, and ferments above the edge of the beater; to allay this fermentation, a little oil is poured in, and the beating again renewed, for twenty, thirty, or forty minutes, or until a small muddy grain begins to appear, which is the indigo granulating.

To discover this the better, and to find when the liquor is sufficiently agitated, they put some of it continually in glasses, or on plates, and from thence make their observations, and when they suppose the granulation near at hand, they add a little lime water from another vessel, which considerably quickens the work; the liquor appears of a purple hue, the whole becomes muddy, and the indigo granulates more completely. It is now suffered to settle, and the clearer part is let off into other vessels, letting off the water still as it settles, until only the muddy part remains, which is put into bags of coarse linen, where it remains till the moisture is entirely drained off; after this, it is cautiously exposed to the sun in boxes or frames, till it is completely dried, and forms the drug called indigo.

Rice can only be cultivated in low wet land, or land which is capable of being occasionally flooded, and in warm climates; it is a native of the eastern kingdoms, but from some seeds which were carried to South Carolina, it has become a very considerable article of their agriculture, food, and commerce. It is planted or sown in March, April, or May, in furrows eighteen inches asunder, and about three inches deep; into these drills or furrows, the seeds are dropped about half a peck to an acre; immediately after planting they overflow the ground if they can, to a certain depth, and this they do several times in its growth, observing in the intervening space of time, to clear the plants from weeds, which they are or ought to be very careful to do till the time of harvest, which is performed like the wheat harvest in England, by reaping and stacking it in ricks or barns.

When at a proper time of year, it is thrashed and winnowed from the chaff, rice requires an additional operation to cleanse it from the husk, which is done by mills of about two feet diameter, made on purpose; a second winnowing is then necessary, and a pounding in mortars is necessary to free it from its thick skin, which is a laborious work, done by negroes; after this it is separated from the dust and broken grains, and packed up in barrels for market.

There are generally two crops of corn in a year, viz. the European wheat is generally cut down first, and in barn by the beginning of June, when they plow and sow the land with buck-wheat, or Indian corn, which commonly is ready in September, October, or November, and serves their horses, hogs, and poultry.

GEORGIA. In the year 1732, a scheme was set on foot by General Oglethorp, and other disinterested and patriotic gentlemen, to settle this province, and accordingly a plantation was formed to enable poor and indigent families to live and flourish there; and this with an absolute prohibition of any of the subscribers receiving any emolument for themselves or families: Accordingly a patent was obtained, and the whole carried on under the patronage of the general, who was indefatigable in the undertaking for the advancement of the settlement; but notwithstanding the regulations were drawn up with the greatest care, they grew discontented, and threw themselves into the hands of government, who in the year 1752, revoked their charter.

This province is situated between 30 and 32 degrees of north latitude, and between 76 and 86 of west longitude. It is

about 700 miles long from east to west, and 120 from north to south; is bounded on the north by Carolina, on the south by Florida, on the east by the Atlantic ocean, and on the west by the Apalachian mountains.

Its soil and climate differ very little from Carolina, and in the course of a few years the productions will be in all probability similar and equal.

[To be continued.]

ART. II. *On ornamenting Farms by Planting.*

To the EDITOR.

S I R,

NOTwithstanding your first and principal design in this work is to furnish your readers with subjects of real utility, and to communicate instruction on the most interesting branches of agriculture, yet I hope you will give place to a few thoughts on a subject which may prove amusing rather than important.

Amongst all the occupations that engage the attention, or employ the hands of mankind, there is no one more pleasing, innocent, and improving to the mind than that of agriculture. It is a science the most antient, the most agreeable in its nature, and beneficial in its consequences to individuals, and society. The most curious mind, the most enlarged understanding, may, in the study of it, find a source of endless entertainment; in the practice, every gratification that nature has given us senses to enjoy, and the increase and preservation of that health and vigor which qualifies for every other enjoyment, and is indeed the balm of life.

A farm, (as I observed on a former occasion) is only a large garden,—and a beautiful garden indeed it might be made with very little additional trouble and expence. Since the present taste for gardening has so generally taken place, flowering shrubs, and forest-trees are become articles of very easy purchase, and are raised and multiplied with little trouble from seeds or off sets. There are few farmers who could not easily spare a rood of ground for a small nursery; in this they might for less than twenty shillings per annum, raise a number of beautiful though now common flowering shrubs, which when of sufficient growth, might be planted out in their hedges, or the borders of their fields, and would add greatly to their beauty. A few forest-trees, planted in small clumps, on some of the waste places of their farms, and in the corners of fields, would

would not only be living ornaments, but useful for many purposes; it would also conduce much to the pleasure of travellers, if the owners of land along side our public roads, would bestow a little attention to this subject: Whenever we can add to the pleasure of the public, without counteracting our own interest, and even when it is attended with some trifling trouble and expence to ourselves, the obligations we lie under to each other as members of civil society, strongly induce us to it. He who consults his own interest merely, deserves very little from others; but he who takes some small pains by his own contributions, to add to the general stock of happiness, merits their estimation and praise.

Divers hardy flowering shrubs which at present are confined to the gardens, and pleasure grounds of gentlemen, would make excellent fences, and add beauty to usefulness. Of this kind are the phillyrea, alaternus, pyracantha, red rose, privet, syringa, lilac, bay, and laurel. These properly interspersed in the hedges of a farm, when those hedges are planted with hollies, hornbeam, white and black thorn, honeysuckles, and wild roses, would render our fields a delightful pleasure ground, and be attended with no more expence than common quickset hedges. The pyracantha, is one of the most proper plants for a living fence that can be planted; it is very easily propagated, may be multiplied very fast by laying down the young flexible branches, and the verdure of its leaves, with the beauty of its large bunches of scarlet berries in the depth of winter, renders it a very pleasing object, if any object can at that time give pleasure.

In such little waste spots as generally lie uncultivated, firs, larches, mountain ashes, laburnums, abeles, limes, chesnuts, junipers, and birch trees, planted in small clumps, would cost little, and thrive very well. It would be a great improvement to these unprofitable waste places, and add greatly to the beauty of the country thus to adorn them. Many of these plants and shrubs succeed very well in a barren soil, and are the only species of plants which it will support to any advantage: I am not unacquainted with the mode and the expence of putting my plan into execution, and will venture to assert, that one rood of ground employed as a nursery for these shrubs and trees, would, in three or four years, raise enough of all the various kinds mentioned to plant out in the hedges and waste spots of a farm of three hundred acres of land; and in two or three years after they are so planted, they want no further culture, and exhibit a most beautiful appearance.

I cannot

I cannot avoid expressing my most earnest wishes, that from the hints now given, some of our sensible and public-spirited Farmers would set examples of this kind to the rest; such of them as are owners of land would find their account in it whenever they chose to let or sell their farms thus beautified; and I think every landlord who sees a tenant thus employed in improving waste spots, and adorning his hedge-rows, would readily bear a part of the small expence incurred by so laudable an undertaking. If Farmers in general would lay by a twentieth part of the expence, which, in the overflowings of their good-nature, they often inconsiderately put themselves to in treating one another, sometimes to excess at their own houses, and apply it to the purpose recommended, it would more than defray all the charges of ornamenting their farms, in a manner as useful as it would be pleasing, and convince us that the improvement of their taste in things agreeable, kept pace with their progress in the art of acquiring wealth.

J. BRIEGEMNA;

ART. III. *On the Rotation of Crops.*

To the EDITOR.

SIR,

NO branch of husbandry requires more skill and sagacity than such a succession of crops as may keep the ground always in heart, and yet draw out of it the greatest possible profit.

A horse is purchased for labour, and it is the purchaser's intention to make the most of him. He is well fed, worked in proportion to his strength; to over work him is to render him useless.

It is precisely the same with land; profit is the Farmer's grand object, but he knows, that to run out his farm by indiscreet cropping is not the way to gain profit. Some plants rob the soil, others enrich it, some bind, others loosen. The nice point is, to intermix crops so as to make the greatest profit consistent with keeping the ground in a proper state of fruitfulness and strength.

In this view, it is necessary accurately to examine the nature of those plants usually employed in husbandry.

Culmiferous plants having small leaves, and few in number, depend mostly on the soil for nourishment, and but little on the air. During the ripening of their seed, they draw nearly their whole nourishment from the soil; as the leaves being at
that

that time dry and withered, have lost their power of drawing it from the air: Now as these plants are cultivated chiefly for their seed, and are not cut down till their seeds are fully ripe, they may all of them be deemed robbers, some more, some less. But such plants while young are all leaves, and in that state draw most of their nourishment from the air; therefore when these are cut green for food to cattle, the crop does no injury to the ground. A hay crop, even where it consists wholly of ray grass, is not a robber, provided it be cut before the seed is formed, which it must be, to have hay in perfection. A leguminous plant by its broad leaves, draws much of its nourishment from the air. A cabbage owes its growth more to the air than to the soil, and when cut and hung up in a damp place, preserves its verdure longer than other plants. A seed is that part of a plant which requires most nourishment, and for that nourishment a culmiferous plant must be indebted entirely to the soil.

Pease and beans are leguminous plants, but being cultivated for seed, they seem to occupy a middle station. These plants are distinguished no less remarkably by the following circumstance; all the seeds of a culmiferous plant ripen at the same time: As soon as they begin to form, the plant becomes stationary, the leaves wither, the roots cease to push, and the plant when cut down, is blanched and sapless. The seeds of a leguminous plant are formed successively: Flowers and fruit appear at the same time in different parts of the plant, which is all this time growing and pushing its roots. The difference therefore, with respect to the soil, between a culmiferous crop is great. The latter growing till cut down, keeps the ground in constant motion, and leaves it to the plow loose and mellow. The former gives over growing long before reaping; and the ground by want of motion, turns compact and hard. Nor is this all, dew falling on a culmiferous crop after the ground begins to harden, rests on the surface, and is exhaled by the next sun. Dew that falls on a leguminous crop, is shaded from the sun by the broad leaves, and sinks at leisure into the ground. Therefore, after the former, land is hard and dry, after the latter fat and unctuous.

Of all culmiferous plants, wheat is the most severe, by reason of the long time it occupies the ground without admitting the plow. And as the grain is heavier than either barley or oats, it probably requires more nourishment than either.

As pease and beans by their green leaves draw much of their nourishment from the air, and keep growing while they stand, they

they draw less from the ground, and leave it in good condition for subsequent crops.

Culmiferous crops (as has been observed) do not rob the soil much when cut green: The soil, far from hardening is kept in constant motion by the pushing of the roots: and is left more tender than it would have been without any crop. But bulbous rooted plants are above all successful, in dividing and pulverizing the soil; potatoe roots for instance, grow from four to ten inches under the surface, and, by their size and number, they divide and pulverize the soil better than it can be done by the plough. The potatoe, however, with respect to its quality of dividing the soil, must yield to the carrot and parsnip, which being larger roots, often pierce to the depth of eighteen inches. The turnip divides the soil more than can be done by a fibrous rooted plant, but as its bulbous root is for the most part above ground, it divides the soil less than parsnips, carrots, or potatoes.

Whether potatoes or turnips be the more gentle crop, appears a difficult question to answer, with certainty; the former bears seed, and probably draws more nourishment from the soil than the latter when cut green. On the other hand, potatoes divide the soil more than turnips, and leave it more loose and friable: The same may be said of the cabbage and turnip.

I have now given a number of facts; What is the result of the whole? I think it is clearly this: That all culmiferous plants are robbers; some more some less: leguminous plants are opposite; if any of them rob the soil, it is only in a slight degree, and all of them without exception, divide and loosen it.

A culmiferous crop is however, generally the most profitable; but few soils can long bear the burthen of such crops, unless relieved by leguminous crops: These on the other hand, without a mixture of the former, would soon render the soil too loose.

These preliminaries will be some guide to the Farmer, in directing a proper rotation of the crops. Where marle, lime, dung, or other manure can be easily procured in plenty to recruit the soil after severe cropping, I know no rotation more proper or profitable in a strong soil, than wheat, pease or beans, barley or oats, and fallow. The whole farm may be easily brought under this rotation, except the land reserved for hay. But as such manures in many places are not to be had without great expence, it is of more importance to determine what should be the rotation where no manure can be procured,
but

but the dung collected in the farm. Considering that culmiferous crops are the more profitable in rich land, it would be best to raise more of them than of the other kind; but in the general, it may be laid down as a rule, that alternate crops ought to form the rotation.

There are many soils which, with the most favourable rotation, will not stand good long unless relieved from time to time by pasturing. If such extended rotation be artfully carried on, crops without end may be obtained in a tolerable good soil without any manure but what is produced on the farm.

Having discussed the nature of plants so far as the rotation of crops is concerned, I shall send you a few observations on the nature of soils in another letter;

Hertfordshire,
Sept. 4, 1777.

And am, your very humble servant,
JOHN EDGELY.

ART. IV. *Directions for managing the Orchard and Kitchen Garden in November.*

THE weather in this month being often favourable gives the gardener an opportunity for planting of trees, and putting in flower-roots for the succeeding spring.

Continue to earth up celery and chardons for blanching, observing always to do it in dry weather, and tie up endive to blanch at the same time. Those asparagus beds which were not dressed the last month should now be done, by cutting down the halm, and hoeing the weeds, which should be buried in the alleys to rot.

Transplant brown Dutch, Imperial, cabbage, and Silesia lettuces, under warm walls or hedges, to remain the winter; and at the same time plant some of the Silesia, cos, and other tender lettuces under frames, or on beds framed over with hoops, and covered with oiled paper that the plants may be defended from frosts.

Plant beans and pease in warm situations, for an early crop, observing to do this in dry weather.

About the beginning of this month transplant cauliflower plants under bell and hand glasses, for an early crop, and the others should be planted under frames, where they may be sheltered from severe frost in winter.

Towards the latter end of this month trench the ground between the artichokes, laying a good ridge of earth upon each row of roots; and if the ground be poor enrich it with dung.

In dry weather hoe and clean the weeds from among the winter spinach sown in July. Weed your beds of onions sown in July, and also those on which your Welch onions are sown; but the earth near the latter should not be disturbed, for although they die to the surface, their spreading roots will abide, and come up early in January.

Sow raddishes on warm borders for an early crop, the beginning of this month, and transplant cabbages intended to come early in the summer.

You may now sow all sorts of salad herbs on moderate hot-beds, arched over with hoops to keep the frost from them, otherwise they will be destroyed thereby as soon as they appear above ground. Those persons who are lovers of mint in their sallets should now plant some of the roots upon a moderate hot-bed, which will be fit for use in six weeks time, and may be continued till the beds in the open air will produce it.

If your soil be dry, this is the best time for transplanting all sorts of fruit trees, in doing which, never cut off their heads till the spring, but lay turf about their roots to prevent the frost from injuring their small fibres.

Plant gooseberries, currants, raspberries, and strawberries, that they may take root before the frost comes on, they will then produce fruit the succeeding summer.

In the beginning of this month prune peaches, apricots, nectarines, and vines, which is a much better method than to let them remain till spring; for if this be performed early in autumn, their wounds will heal before the sharp frosts set in, and they will be in less danger of drying after the knife than when pruned in the spring.

Prune apples, pears, plumbs, and all other hardy fruit trees, both against walls and espaliers.

Plant stocks of all kinds in the nursery for grafting, and preserve kernels and stones in sand in a warm situation until spring, to be then planted for stocks.

Early this month finish planting out flower roots. Transplant hollyhocks, columbines, campanulas, French honeysuckles, daisies, polyanthus, sweet-williams, and pinks.

Transplant all hardy kinds of flowering shrubs, and May layer of the last year's shoots to be taken off in the spring. Cleanse all the borders of weeds, and cut down the stalks of all flowers that have done blowing.

ARTICLE V.

For the FARMER'S MAGAZINE.

Mr. SYLVAN,

AMONG many other useful recipes in your valuable miscellany, you have given "A safe, easy, and cheap cure for a broken-winded horse," page 35, No: 11, for February, 1777. I hope in your next Magazine you will communicate to the public, the just proportions of lime and water, how long the water should stand upon the lime, whether the horse should drink no other water than that which is prepared with lime, in what quantity he ought to take the lime water, and whether it is equally efficacious for a horse running at grass as for one kept in the stable, or whether a horse taking the prepared water must be kept in the stable, and if he must be kept in, whether any particular diet is necessary. In answering these questions in your next Magazine, I doubt not but you will much oblige many of your readers, as well as

Your constant reader, and sincere well-wisher,

19th August 1777.

STAFFORDIENSIS.

[We will thank the gentleman who gave the receipt to the public, if he would answer in our next Magazine, the questions here asked by Staffordiensis.]

ARTICLE VI.

Mr. SYLVAN,

EVERY Magazine I receive gives me a higher opinion of you; you shew it is your wish to make your periodical publication useful to the world. The difficulty of compiling a Farmer's Magazine is great; the greatest part of us, as you have somewhere observed, have an aversion to books; almost every reader therefore is a partial critic, who peruses your Magazine only to look for something to laugh at: Sensible of this, you are forced to be cautious, and reject every thing that is merely theoretical; and you are forced to be indefatigable in furnishing out your book with practical improvements and useful hints; when you cease to be either, it will sink into oblivion. Such is your task; it is true, your abilities are answerable to it, your knowledge of agriculture is by no means superficial, and you take every proper method to gain more. But inexcusable would the Farmers be, if they suffered the

whole weight to lie on you without giving you a helping hand; and therefore, as example is better than precept, I have, according to your desire sent you my address, with leave to employ my pen as you please; nor will I ever cease to be a friend to your Magazine till you deviate from your plan, and grow careless of our interest.

Hem--ll, Norfolk,

Aug. 12, 1777.

I am, your very humble servant,

ARCUS.

ARTICLE VII.

Mr. SYLVAN,

AS I am a constant reader of your Magazine, I should be glad if some of your correspondents will answer the following articles:

1. I should be glad to know what will dry up a cow's milk for feeding, and what will cure a sore bag in summer, when feeding?

2. What will cure the halt in sheep, and stop a scouring?

3. What will destroy weasels that haunt a dove-house?

4. What will cure corns in the feet hard and soft?

And you'll oblige, your well-wisher,

Walgrave, Aug. 9, 1777.

S. H.

ART. VIII. *On the Use of Sea Salt as a Manure.*

To the EDITOR.

S I R,

AS I approve much the plan of your very useful publication, as well as the method you have judiciously taken to procure authentic information of the state of husbandry in every part of this kingdom, I now send you an account of an experiment I made about three years since, on the use of sea salt as a manure.

In November, 1774, I sowed a large field with wheat, and when it had been harrowed in two or three days, I sowed one of the lands in the said field with foul salt, at the rate of ten bushels per statute acre.

The corn in that land did not come up until long after the rest of the field, insomuch that at one time I was afraid I should not have had any crop on that part of the land. At length it made its appearance, and in June, when a gentleman saw it who came to visit me, the appearance was so striking,

ing, that he readily distinguished the land the salt was sown on from the rest of the field.

The plants were taller and stronger, the leaf much broader, and of a deeper, healthier verdure. When harvest came, the crop proved the good effects of this manure by its superior quantity and excellence, to that of the other parts of the field, and incontestibly proved it to be a beneficial manure for wheat lands.

But however proper for arable, it ought not to be laid on pasture land, without due restitution to time and quantity. Salt spread on grass or green herbage, destroys the blade; and therefore allowing that it adds fertility to the soil, the proper time for laying it on is in January, that it may be washed into the roots before the grass begins to shoot.

If you think these hints will be of any use to your readers, I may probably send you my thoughts on other branches of husbandry, and am,

Your constant reader, and humble servant,
Lancashire, Aug. 24, 1777. A FARMER.

ART. IX. *Clay recommended as a drier of wet Pasture Land.*

To the EDITOR of the FARMER'S MAGAZINE.

S I R,

AS I wish to promote your useful work, I here send you a hint which may possibly be of service to some of your readers. I have a small grass plat at the bottom of my garden, which during the whole winter and spring, was formerly so wet that we could not walk on it without leaving deep foot-steps. I tried to lay it dry, by making covered drains in a pond on the lower side, but to no purpose. At length after divers other attempts proved unsuccessful, I spread a load or two of clay upon it. This did the business effectually, by rendering it perfectly dry and firm. I am hence of opinion, that nothing would be more useful to the Farmer in rendering wet pasture lands dry, than clay, especially such as are too flat to admit of draining by land ditches. The surface of the ground need only to be covered about an inch thick about January, and it will not hinder the spring crop of grass.

I am, your humble servant,
JOHN SLOMAN.

ART.

ART. X. *Observations on the Nature and Effects of Lime.*

S I R,

ON looking over your observations relative to the different kinds of manure used for the improvement of land, I am somewhat disappointed at your so slenderly mentioning lime; and as I live in a town where that commodity is easily procured, and of course have made great use of it, I take the liberty of sending you such remarks thereon as my own experience, and that of my neighbours, have induced me to believe may be useful.

Lime, when it can be got in great plenty, and at a moderate distance, is a very profitable manure, the benefit of which is so visible in the country where I reside, that vast quantities are annually laid on the land, and turn to a very good account.

However people may differ in other particulars, all agree that the operation of lime depends on its close and intimate mixture with the soil, and therefore, that the proper time of applying it is when it is powdered, and the soil at the same time in the highest degree of fineness. This opinion seems to be founded on a solid basis.

Lime of itself is absolutely barren, and yet greatly enriches a barren soil; neither will it produce any good effect without the other. Therefore the effect must depend on the mixture; and consequently the better they are mixed the greater must be the effect. I know a gentleman near Royston, in Cambridgeshire, who some years since prepared a quantity of lime for manuring a moor ploughed before winter. The lime was immediately spread on a part of it, but the work was stopped by bad weather. The remaining heap of lime was indeed covered with sod, so slightly as not to throw off the rain. When laid on the rest of the field in March, it was so clotted, as to be but very imperfectly mixed with the soil. The crop of oats on the part first limed was good; that on the part last limed, good for nothing. The subsequent crops however, proved tolerable, as the clotted lime by repeated ploughings was better mixed with the soil.

Hence it follows, that lime ought always to be slaked with a sufficient quantity of water, because by that means it is reduced the most effectually into powder. Lime left to be slacked by a moist air, or accidental rains, is seldom or never thoroughly reduced to powder; and therefore cannot mix so intimately with the soil. The best way is to slake it before it is carried on the land, and to cover the heaps with sods to keep

Keep the rain from them. It is however very prudent to avoid bringing the lime home long before the ground is ready for it; for where it lies too long in heaps it is attended with two bad consequences: First it attracts moisture even though well covered, and is apt to run into clots, which prevents its mixing kindly with the soil: And next, burnt limestone, whether in shells or in powder, returns gradually into its original state*. This is verified by fact, for after lying long, people are obliged to use a pick-axe, to separate the parts.

For this reason it is a bad practice, though common, to let lime lie spread on the surface of land all the winter. The bad effects above-mentioned take place here in part; and there is another inconvenience attends it; rain washes the lime down into the furrows, and in a hanging field will carry the whole away.

As the particles of powdered lime are both small and heavy, they quickly sink to the bottom of the furrow, if care be not taken to prevent it. It is therefore the best method to spread the lime, and mix it with the soil immediately before sowing, or along with the seed. In this mode of application there being no occasion to move it till the ground be stirred for a new crop, it has time to incorporate with the soil, and does not readily separate from it.

Thus, if turnip-seed is to be sown broad-cast, the lime should be laid on just before sowing, and harrowed in with the crop. If a crop of drilled turnips or cabbage be intended, the lime ought to be spread immediately before the drills are formed. With respect to wheat, the lime ought to be spread immediately before seed-furrowing: If spread earlier, before the ground is sufficiently broken, it sinks to the bottom. If a light soil be prepared for barley, the lime should be spread after seed-furrowing, and harrowed in with the seed. In a strong soil it sinks not so readily to the bottom; and therefore, before sowing the barley, the lime ought to be mixed with the soil by a large strong harrow called a brake. Where a moor is fallowed for a crop of oats the next year, the lime ought to be laid on immediately before the last ploughing, and harrowed in as above.

The quantity to be laid on depends on the nature of the soil: Upon a strong heavy soil, 140 or 150 bushels to the acre; on medium soils 100 may suffice, and on thin gravelly soils 60 or 70 will be enough.

Some

* We apprehend that lime made of chalk is not so liable to do this as lime burnt from limestone.

Some Farmers are in the practice of liming a pasture field immediately before they break it up: This is an unsafe method, as the lime is by that means thrown to the bottom of the furrow and lost.

The best time for liming a pasture field which you intend to plough for corn, is a year or two before it is broken up: The rains will then wash the lime in among the roots of the grass, and it has time to incorporate with the soil.

I am, sir, wishing you all possible success in your laudable undertaking, your constant reader, and humble servant,

Saffron-Walden,

A LANDHOLDER.

June 20, 1777.

For the FARMER'S MAGAZINE.

ART. XI. *On the Benefit derived by pasturing Horses on the Salt Marshes.*

THE salt marshes along the Thames, and in Lincolnshire, and the isle of Ely, are as good pasture for horses, as any in the kingdom. In these marshes a great number of horses run all the year round, with very good success in open seasons. The common notion of inland Farmers, that the air is prejudicial to cattle, is very erroneous; and experience daily confutes it. The air that comes off the marshes is very injurious to human constitutions, especially those who are not used to it, and subjects them to annual returns of the ague; yet it has no such effect upon brutes: This may probably be owing to the diuretic quality of salts with which the grass of those marshes is more or less impregnated, as the tides rise higher or lower upon them. The marsh soil is for the most part a composition of a very fine light mould, mixed with sand, covered with a fine trefoil, which sows itself, and grows very thick in some places; if the rains fall ever so heavy, the ground being open, drinks it up immediately, so that the cattle always lie dry upon it: This is one of the greatest benefits to horses at grass. They purge more there, both by dung and urine, than on any other pasture, and afterwards take on firmer flesh. Those who send their horses to salt marshes only to cleanse them, and after purging remove them to other pastures to fatten, are greatly in the wrong; many horses run there summer and winter, and are always in good order; as few accidents happen to them there as any where else, and they will grow fat even when the feed is so bare in dry weather, that little grass is to be seen. Twenty
four

four-hours rain, in the grass-season, will bring it up surprisingly.

Some persons never house their horses there, even in winter; but let them take their chance, though there are neither trees nor hedges to cover them; and yet they are seldom the worse for the extremity of the weather, and unless the ground be covered with snow they will (without dry forage) be found in good case, even in the months of December and January.

The water in marshes is generally brackish, which, at first is not very agreeable to horses that have not been used to it, but they will soon relish it as well as any other. The greatest danger to cattle in marshes is from the deep ditches made to convey the water off in spring tides, some of which have their bottoms full of stiff loam and weeds. If a horse that is a stranger to these grounds happens in leaping to step into these ditches, he is in danger of being lost, unless he is timely discovered. Sometimes cattle have been washed away with the spring tides, by going too near the dykes, but these accidents seldom happen, not only because the marsh men are generally on the watch at such times, but most horses have sagacity enough to avoid the danger.

ART. XII. *Observations on steeping the seeds of Grain in Liquors before sowing, and on the proper Food of Plants.*

THE steeping of seeds in prolific liquors is not of modern invention. The Romans, who were good husbandmen, have left us divers recipes for steeping of grain in order to promote the powers of vegetation. In England, France, Italy, and all other countries where agriculture has been attended to, we see a variety of liquors recommended for the same purpose. Good nourishment has ever been observed to add strength and vigour to all vegetables; hence it seemed natural to suppose, that by filling the vessels of the grain with nourishing liquors, the germ, with its roots, would be invigorated. How far this reasoning is founded upon just principles, remains to be examined; I am not an advocate for steeping; all my experiments demonstrate that they have no inherent virtue; I have more than once sown the seed steep'd and unsteep'd, and though all other circumstances were minutely alike, yet I could never observe the least difference in the growth of the crop. I confess that when the light seeds are skimmed off, as in the operation of brining, the crop will be improved, and diseases prevented; but these advantages proceed from the goodness

of the grain sown, and not from any prolific virtue in the liquor. I am happy in not being singular in my opinion; many rational Farmers have been induced to quit their prejudices, and are now convinced by their own trials, that there is no dependance on prolific liquors.

Duhamel, one of the most accurate of the experimental husbandmen, and a most excellent philosopher, speaks in the strongest terms against the practice of steeping, so far as it supposes an impregnation of vegetative particles. I shall not here relate his experiments; I shall only observe, that they are such as any Farmer may make; they are plain and conclusive. Good seed when sown upon land in excellent tilth, will always produce a plentiful crop: The best of grain impregnated to the full with the most approved steep, and sown upon land indifferently prepared, will for ever disappoint the hopes of the Farmer.

I do not, however, presume to condemn the practice in positive terms, although my experiments are against it. Other experiments may be opposed to mine; I shall therefore rest the whole upon a description of what happens to grain after it has been committed to the earth, and hope I shall be able to explain myself with sufficient perspicuity; the subject is curious, and the discussion of it not difficult.

A grain of wheat contains between two capsules a considerable share of flour, which when melted down into a liquor by the watery juices of the earth, constitutes the nourishment of the tender plant, until its roots are grown sufficiently large to absorb their own food; here is evidently a store-house of nutriment, and from that idea it is plain that the plumpest grains are the most eligible for seed. Some Farmers imagine that poor grains may be so impregnated, as to make them equal in vegetative force to the largest. I have more than once made the experiment, and am convinced that plump seeds of the same heap, are superior in goodness to the small ones, though ever so carefully macerated. The farina being the food of the embryo plant, it follows that the vegetative powers will be increased in proportion to its quantity. I have sprouted all kinds of grain in a variety of steeps, and can assure the Farmer that the radicle and germ never appeared so vigorous and healthy as when sprouted by pure elementary water: An argument that the seed wants no assistance.

The same steep when applied in quantities to the soil will undoubtedly invigorate the roots, and nourish the plant; but in that case it operates in common with other manures, and loses the

the idea of a steep. As nitre, sea-salt, and lime, are generally added to the steeps, I have constantly observed, that their application rendered the radicle and germ yellow and sickly; a plain proof that they were unnaturally used at that season. Did the farina need any additional particles, it might be supposed that broth made of the flesh of animals would be most agreeable. To be satisfied of that, I sprouted some grains in beef broth, and an equal number in simple water: The result was, that the radicle and germ produced by the broth were weaker, and less healthy, than those sprouted by the pure element; they were afterwards sown, but I could not perceive any apparent difference in the crop.

As no invigorating, or fructifying liquor, however pompously introduced, has ever stood the test of fair and correct experiment, we may venture to lay it down as an established truth, that plump seed clear of weeds, and land well prepared to receive it, will seldom disappoint the expectation of the Farmer, and upon these he should rely for the goodness of his crop.

In this short dissertation upon steeps, or fructifying liquors, it should be remarked, that I have drawn my conclusions from experiments made upon grain, instead of the seeds of forest-trees, in full confidence that the general laws of vegetation are the same in every kind of seed, from the almost imperceptible seed of the orchis to the acorn of the sovereign oak. And I had this additional reason, that in the course of a few months, I could make my observations upon the different stages of vegetation, from the first appearance of the germ, to the final perfection of the plant.

Upon the whole, I am led to believe that all vegetables from the hyssop upon the wall, to the cedar of Lebanon, receive their principal nourishment from oily particles incorporated with water, by means of an alkaline salt or absorbent earth. Till oil is made miscible it is unable to enter the radical vessels of vegetables, and on that account providence has bountifully supplied all natural soils with chalky or other absorbent particles; I say natural soils, for those which have been assisted by art, are full of materials for that purpose, such as lime, marle, soap ashes, and the volatile alkaline salt of putrid dunghills. It may be asked, whence do natural soils receive their oily particles? I answer, the air supplies them. During the summer months, the atmosphere is full of putrid exhalations, arising from the steam of dunghills, the perspiration of animals and smook. Every shower brings down these oleaginous particles

for the nourishment of plants. Water is thought by some to be the food of vegetables, when in reality it is only the vehicle of nourishment: Water is a heterogeneous fluid, and no-where to be found pure, it always contains a solution of animal or vegetable substances; these constitute the nourishment of plants, and the element in which they are minutely suspended, acts only as a vehicle, in guiding them through the fine vessels of the vegetable body. The hyacinth, and other bulbous roots are known to perfect their flowers in (apparently) pure water. Hence superficial observers have drawn an argument in favour of water being the food of vegetables: But the truth is, the roots, stem, and flowers of such plants are nourished by the mucilaginous juices of the bulb diluted by the surrounding water. This mucilage is just sufficient to perfect the flower, and no more. Such bulbs neither form seeds, nor send forth off-sets. At the end of the season, they appear weak, shrivelled, and exhausted, and are unfit to produce flowers the succeeding year. A root of the same kind that has been fed by the oily mucilagenous juices of the earth, essentially differs in every particular; it has a plump appearance, is full of mucilage, with off-sets on its sides. All rich soils, in a state of nature, contain oil; and in those lands which have been under the plough for some years, it is found in proportion to the putrid dung that has been laid upon them, making an allowance for the crops they have sustained. To set this matter in a clearer light, let us attend to the effects of manures of an oily nature, and we shall soon be satisfied that oil, however modified, is one of the chief things concerned in vegetation. Rape dust, when laid on land, is a speedy and certain manure, though an expensive one, and will generally answer best on a lime-stone soil, or land that has been moderately limed. This species of manure is much esteemed by the Farmer, it contains the food of plants ready prepared; but as it is not capable of loosening the soil by any fermentation, the lands on which it is laid ought to be in excellent tilth.

Farmers that live in the neighbourhood of cities and large towns, use abundance of foot; it is an oily manure, but different from the former, containing alkaline salt, and calculated as well for opening the soil, as for rendering the oily parts miscible with water: It is also observed, that pigeons dung is a rich and hasty manure; these animals feed chiefly upon grains, and oily seeds, it must therefore be expected that their dung contains a large proportion of oil. Swines dung is of a saponaceous and oily nature, and perhaps the richest of the animal

animal manures; when made into compost and applied with judgment, it is excellent for arable lands. The dung of cows and sheep is preferable to that of horses at grass, owing to the quantity of animal juices mixed with their food in chewing. And here I beg leave to remark in general, that the fatter the animal, *cæteris paribus*, the richer the dung. Human ordure is full of oil and a volatile alkaline salt; by itself, it is too strong a manure for any land; it should therefore be made into a compost before it used. The dung of carnevorous animals is plentifully stored with oil. Animals that feed upon seeds and grain come next, and after them follow those which subsist upon grass only.

[*To be concluded in our next.*]

ART. XIII. *On the proper Season of sowing Grain. Containing some curious Observations and useful Experiments on the Subject.*

NOTwithstanding the variation of heat and cold, drought, or moisture, in the different returning periods throughout spring and autumn, the old absurd practice of sowing grain at a certain time, sometimes at one particular week, or even day, still prevails among our Farmers in too many parts of this kingdom. At the annual return of some calendar festival, or neighbouring fair, the ignorant husbandman begins to sow, or to reap, regardless of the state of the air, the driness or wetness of his land, the forwardness or backwardness of the season. To this cause may probably be owing, in a considerable degree, the failure of crops, and the inferior quality of grain. For want of considering whether the earth be in a proper state to receive the seed, it often happens that what the sower sowed with sweat, the reaper reaps with sorrow. The wise œconomist, should therefore endeavour to fix upon certain signs whereby to judge of the proper time for sowing. We see trees open their buds and expand their leaves, from whence we conclude that spring approaches, and experience supports us in the conclusion; but no person has as yet been able to shew us what trees providence has intended should be our calendar. No one can deny but that the same power which expands the leaves of trees will also make the grain vegetate, nor can any one assert that a premature sowing will always, and in every place accelerate a ripe harvest.

Perhaps therefore some success might attend the taking our rule for sowing from an accurate observation on the leafing
of

of trees; we must for that end observe in what order every tree puts forth its leaves, according to its species, the heat of the atmosphere, and the quality of the soil. Afterwards, by comparing together the observations of the several years, it will not be difficult to determine, from the foliation of trees, if not certainly, at least probably, the time when annual plants ought to be sown.

It will be necessary likewise to remark, what sowings made in different parts of the spring produce the best crops, in order that by comparing these with the leafing of trees, it may appear, which is the most proper time for sowing.

Mr. Stillingfleet is the only person that has made correct observations upon the foliation of trees and shrubs in this kingdom. The following is his calendar, which was made in Norfolk, 1765:

Began to leaf,

- Jan. 15. Honeyuckles,
- March 11. Gooseberry, currant, elder,
- April 1. Birch, weeping willow,
- 3. Raspberry, bramble, briar,
- 6. Plumbs, apricots, peaches,
- 7. Filberd, fallow, alder,
- 10. Sycamore, elm, quince, marsh elder,
- 12. Wych elm, quicken tree, hornbeam,
- 14. Apple trees,
- 16. Abele, chefnut, willow,
- 18. Oak, lime, maple,
- 21. Walnut, plane, beech, black poplar, acaua robinia,
- 22. Ash, Carolina poplar.

In different years, and in different soils and exposures, these trees and shrubs vary as to their leafing; but they are invariable as to their succession, being bound to it by nature herself. A Farmer therefore who would profit by this sublime idea, should diligently mark the time of budding, leafing, and flowering of different plants. He should also register the days on which his respective grains were sown, and by comparing these two tables for a number of years, he would be enabled to form an exact calendar for his spring corn. An attention to the discolouring and falling of the leaves of plants, will assist him in sowing his winter grain; and teach him how to guess at the approach of winter.

Towards the end of September, which is the best season for sowing wheat, he finds,

The

The leaves of the plane-tree, tawny,
_____ of the oak, yellowish green,
_____ of the hazel, yellow,
_____ of the sycamore, dirty brown,
_____ of the maple, pale yellow,
_____ of the ash, fine lemon,
_____ of the elm, orange,
_____ of the hawthorn, tawny yellow,
_____ of the cherry, red,
_____ of the hornbeam, bright yellow.

There is a certain kind of genial warmth which the earth should enjoy at the time the seed is sown*. In the animal world we discover this in the most convincing manner. In brutes, the symptoms of that period are plainly marked. The budding, leafing, and flowering of plants, seem to indicate the same happy temperament of the earth.

Appearances of this sublime nature may be compared to the Hand-writing upon the Wall, which was seen by many, but understood by few. They seem to constitute a kind of harmonious intercourse between God and Man. They are the silent language of the Deity.

In order to induce some careful observer to prosecute this useful enquiry, I shall lay before you some experiments made by a very ingenious gentleman, well known to the public for his abilities in the science of agriculture, and indefatigable endeavours to promote useful knowledge.

EXPERIMENT I.

In 1765, this gentleman marked several drills, each a perch long, in a piece of fallow. The soil was a loose woodcock loam on the surface, and under that a clay. He sowed an ounce of wheat in each drill, at the following times.

Drill No. 1, and 2, August 18th and 31st.

— No. 3, 4, 5, Sept. 10, 17, 24.

Plowed again and sowed in.

Drills No. 6, 7, 8, Oct. 1, 13, 20.

Another ploughing.

Drills No. 9, 10, 11. Nov. 1, 9, 16.

Another plowing.

Drills No. 12, 13, 14. Nov. 23, Dec. 3, and 13.

* In the North of England, when the earth turns up with a mellow and crumbly appearance, and smoaks, the Farmers say the earth is brimming. This state is but of short duration, and shews the exact time when the seed should be sown. This appearance will ever coincide with the budding, leafing, flowering, &c. of some plants that grow in the field. The husbandman, should therefore, at that time; makes his observations in order to form his calendar of Flora.

The drills in all the experiments were two feet asunder; they were all hand-hoed at the same time, and the produce was as follows:

Ounces.		Ounces.	
No. 1.	6 $\frac{1}{2}$	No. 8.	5 $\frac{1}{4}$
2.	6	9.	5
3.	6 $\frac{1}{2}$	10.	5
4.	6 $\frac{1}{4}$	11.	5 $\frac{1}{4}$
5.	6 $\frac{1}{2}$	12.	4 $\frac{1}{2}$
6.	6 $\frac{1}{2}$	13.	3 $\frac{1}{2}$
7.	5 $\frac{1}{2}$	14.	3

This experiment, though not decisive in every point, is very important in the result of late sowing. In Suffolk, October is supposed to be the best time for wheat seed sowing; but this shews that September is at least equal, if not superior; and what will astonish one half of the Farmers, is, that the latter part of August is as good as either; but after October, the product decreases, and in December it comes to a trifle. This effect is particular, as the latter sown corn had the advantage of three ploughings more than the early.

EXPERIMENT II.

In 1765, marked some perches of fallow, in a field consisting of a light gravelly loam, and sowed one ounce of seed in each, at the following seasons:

No. 1, 2, 3, Sown Aug. 23, and Sept. 3, 10.

Fresh plowed.

No. 4, 5, 6, 7, 8, Sown Sept. 21, 28, Oct. 4, 11, 18.

Another plowing.

No. 9, 10, 11, Sown Oct. 25, Nov. 2, 9.

Another plowing.

No. 12, 13, 14, Sown Nov. 16, 23, 30.

Another plowing.

No. 15, 16, 17, Sown Dec. 7, 18, 26.

The produce was as follows:

Ounces.		Ounces.	
No. 1.	4 $\frac{1}{2}$	No. 10.	6 $\frac{1}{4}$
2.	5 $\frac{1}{2}$	11.	6 $\frac{1}{4}$
3.	7	12.	6
4.	7 $\frac{1}{4}$	13.	5 $\frac{1}{2}$
5.	7 $\frac{1}{2}$	14.	5
6.	7 $\frac{1}{2}$	15.	4 $\frac{1}{2}$
7.	7 $\frac{1}{4}$	16.	4
8.	7 $\frac{1}{2}$	17.	4
9.	6 $\frac{1}{4}$		

We

We find in this table that the principal produce is from No. 3, to No. 8; that is, from the 10th of September, to the 18th of October, before and after which time we do not find any date with so considerable a one. The similarity of the produce of the dates within that period, gives much reason to suppose an equality from the beginning to the end of it. Number of plowings are apparently of no effect in making up for too late a sowing: But whether that is really the case cannot be known certainly, as the product might otherwise have been less.

EXPERIMENT III.

In 1765, marked some perches in the same field on a clover lay that had been mown once, and part twice; the plowings did not vary in this experiment. They were sown with one ounce of wheat each, in the following seasons:

No. 1, 2, 3, 4, 5, 6, Sown Aug. 17, 26, Sept. 3, 10, 21, 28.

No. 7, 8, 9, 10, 11, Sown Oct. 11, 18, 25, Nov. 2, 9.

No. 12, 13, 14, 15, 16, 17, Sown Nov. 16, 23, 30, Dec. 7, 18, 26.

Those numbers that were sown before the second crop of clover had come to a proper height for hay, were mown young, and the produce carried off. The hoeing and weeding were performed the same days to all.

The produce:

Ounces.		Ounces.	
No. 1.	3½	No. 10.	6½
2.	3½	11.	6½
3.	5	12.	6½
4.	7	13.	5½
5.	8½	14.	5½
6.	7½	15.	4½
7.	7	16.	5
8.	7	17.	4½
9.	7		

This experiment on the whole, confirms the result of the preceding one, and is of more consequence, as it is a total variation, being a clover land crop, and all the rest fallow ones. But the trifling product of the numbers sown early, shews, that very early sowing is much worse on clover than on fallow land: which I take to be owing to the roots of the clover, not only being short of their proper size and growth, but also in an improper state for forwarding the growth of the wheat, perhaps so full of juices as to mould the seed.

[To be continued in our next.]

ART. XIV. *Description, Mode of raising, Use and Value, of the Horse Chestnut Tree, abridg'd.*

(From EVELYN'S SYLVA.)

THE horse chestnut is a tree of singular beauty and use: The leaves are large, fine, and palmated, appearing very early in the spring.

This tree is naturally uniform in its growth, forming its head, if left to nature, into a parabola. In the spring it produces long spikes of very beautiful flowers; and although in the autumn its leaves fall off pretty early, it makes amends by exhibiting its nuts of a bright brown colour, some on the ground, some ready to fall, and others just peeping out of their cells.

This tree is a native of the east, and was most probably brought from Constantinople in the beginning of the fifteenth century; and is very proper to be planted for long avenues or walks. It has indeed been rejected for this purpose by some, on account of the early falling of its leaves in autumn: But it should be considered that it shoots out proportionably earlier in the spring, which, together with its fine shade and beautiful flowers, render it a very ornamental and desirable tree.

The horse chestnut is extremely well adapted to parks, not only because it grows to a large size, and forms a beautiful head, which at a distance has a pleasing effect on the eye of the beholder, but on account of the quantity of nuts it produces, which are excellent food for deer in the rutting season. It is also very proper for the boundaries of open fields, to terminate views, &c. and though there are no deer to eat the nuts, yet swine are equally fond of them, and will fatten excellently on such provender.

The buds of this tree before they shoot into leaves become turgid and large, so that they have a good effect on the eye, by their bold appearance, long before they expand into leaves and branches. And what is peculiar to the horse chestnut is, that as soon as the leading shoot is come out of the bud, it continues to grow so fast, as to be able to form its whole summer's shoot in three weeks or a month's time. After this it grows very little in length, but thickens, and becomes strong and woody, and forms the buds for the next year's shoot. The flowers are in full blow about the middle of May, and on old trees especially, make a fine appearance.

This tree is propagated from the nut; therefore in autumn when the nuts fall, a sufficient quantity should be gathered.

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Some people recommend them to be sown immediately in drills; but others with more propriety, delay the sowing till the spring, by which means they escape the field mouse. Previous to sowing, put the nuts in a tub of water, and throw away all that swim. Plant them (either in October or February) in drills a foot asunder, and about four inches deep. When the plants have stood a year, they may be taken up, their tap roots shortened, and planted in the nursery, which should be well dug to receive them. Let them be here planted in rows three feet asunder, and set them twenty inches distant in the rows. The best time for doing this work is the latter end of February, for if they are removed in October, severe frosts will be subject to throw the young plants out of the ground before winter is over. A year after they have been planted in the nursery, it will be very proper to cut them down to within an inch of the ground, which will cause them to shoot vigorously with one strong and straight stem. Without this treatment they are apt to grow scraggy and crooked, and to make but slow progress.

While in the seed bed, and nursery, great care should be taken to keep them clear from weeds, and while here, never cut off any of their side branches. In the nursery they may remain four or five years, when they will be fit to plant out with no other pruning than taking off very strong side branches, which if suffered to remain will render the trees crooked. When of a sufficient size to be planted out for standards, either in fields, wildernesses, clumps, quarters, or avenues, they should be carefully taken up; and having holes dug three feet square, and one and a half feet deep, with the turf chopt small at the bottom of each hole, cut all the bruised parts off from the roots, plant them, and cover the fibres with the finest mould; they may then be turfed round to keep them steady against the winds. After they are thus planted, neither knife nor hatchet should come near them; for they should be left to nature to form their fine parabolic heads, and assume their utmost beauty. This tree delights most in good fat land; but it will grow exceeding well on clayey and marley grounds. I have seen large trees luxuriant and healthy, in very cold, barren, and hungry earth. They will even grow in sand and all mixed soils, upon exposed and bleak places, and on the pendent declivities of hills.

It were greatly to be wished that the ancient spirit for propagating the chestnut could be revived; as the timber is excellent, being as valuable as the oak, and in many respects supe-

rior to it. The uses of the timber of this tree are almost universal; it is not only good for all sorts of buildings, but it is also very proper for mill timber and water works; so that if pipes bored of this wood lie constantly under ground they will endure longer than the elm. It is preferred for making all sorts of tubs and vessels to hold liquor, and in this respect it is superior to the oak; because when once thoroughly seasoned, it is not subject either to shrink or swell, but will constantly maintain an equal magnitude of bulk, and for this reason the Italians make all their tons and wine casks of it. Poles of this wood for hops and vines will last longer than of any other.

If you design a large plantation of these trees for timber, after having two or three times ploughed the ground, make your furrows six feet apart, and lay the nuts ten inches or a foot asunder, covering them with earth three inches deep; the distance between the furrows is to admit the horse hoeing plow, which will dispatch a great deal of work in a short time, but it should be performed with great care, lest the young plants are injured: to prevent this, let the middle spaces only be cleaned with this instrument, and a hand hoe be used to clean between the plants, and near the sides, and also on each side, where it will be unsafe for the other to be drawn; and in hand hoeing care should be used not to cut the tender rind of the plants. The following spring let the ground be stirred with the plow, which will not only check the weeds, but greatly promote the growth of the plants, by admitting the sun and moisture to penetrate more easily. When these have remained three or four years, if the nuts succeed well, you will have many of these trees to remove. This should be done in March, leaving the plants three feet distant in the rows, at which distance they may remain three or four years more, when you should remove every other tree to make room for the remaining ones, which will reduce the whole plantation to six feet square. Thus they may stand till large enough for poles; then cut down every other of these trees within a foot of the ground, in order to make stools for poles, which in eight or nine years time will be strong enough to lop for hoops, or hop-poles, for which purposes they are far preferable to most other trees; so that every tenth year there will be a fresh crop, which will pay the rent of the ground, and all other charges, and at the same time a full crop of growing timber will be left, and yield excellent profit. But as the large trees increase in bulk, their distance of twelve feet square will be too small; therefore when they are grown to
a size

a size fit for small boards, fell every other tree, which will reduce them to twenty-four feet square, which is a proper distance for them to stand for good; this will give air to the underwood, and the fall of small timber will repay the principal, and great interest for the money first laid out in planting and rearing them. The stools for poles will pay the full rent of the ground, so that all the remaining trees will be clear profit.

If the timber of this tree be dipt in scalding oil, and well pitched it becomes extremely durable: When made into casks for liquor, it never gives any taste of the wood. The coals are excellent for the smith, because soon kindled, and as soon extinguished; but the ashes of the chestnut wood are not fit to make lie with, because it stains the linen. In many parts of Europe the nut is much used for food; in Italy they boil them with their bacon: The best tables there, and also in France make them a service, first roasting them on embers, and then eating them either with salt, in wine, or with juice of lemon and sugar. The Piedmontese add fennel, cinnamon, and nutmeg to their wine; others macerate them in rose-water.

Bread made of the flour is an exceeding nutritive robust food, and makes women well complexioned. Eaten too freely raw, or even in bread, they will swell in the belly, but with no other inconvenience. But the flour made into an eleuary, and eaten with honey, fasting, is an approved remedy for a cough, and against spitting blood.

They are an excellent food for swine, who will prefer them to, and fatten on them better than on acorns. It is better to beat down the fruit before it is fully ripe, or else if they fall of themselves, you must smoak-dry them to prevent their decaying.

For the **FARMER'S MAGAZINE.**

Omnium autem rerum ex quibus aliquid acquiritur, nihil est Agricultura melius, nihil uberius, nihil dulcius, nihil homine libero dignius. **CICERO de officiis.**

THE generous support which the Society for encouraging Agriculture and Arts, at Bath, has received, does great honour to the understanding and disposition of those who have promoted it, and proves that public spirit is so far from being extinct, that it needs only a proper object to cause it to be exerted in its full force. The design of the above Society,
and

and the advantages likely to accrue from thence, have been already laid before the public, in an elegant and judicious manner, by a Gentleman who first suggested the undertaking, and to whom the foundation of it is principally to be ascribed. But as different ideas are suggested to different persons by the same event, I also take the liberty to lay before the public, a few thoughts that have occurred on the advantages likely to result from such institutions.

First, then, they are the means of diffusing and encouraging useful information, and of removing popular prejudices. It has been an old remark, that and no branch of knowledge has ever made much progress whilst it has been entirely confined to those who exercise it. Such do perfectly well to execute a given plan, but seldom suggest improvements, to which a degree of education and liberal knowledge is almost indispensably requisite. This has been particularly evidenced in Agriculture, which, since it has become an object of liberal study, and considered as a branch of the philosophy of nature, has made greater advance, than in many times that period before.

Wedded to the opinions as well as practice of their predecessors, the common people persevere in the same track, from which they are with difficulty induced to vary by any thing short of absolute conviction. Indeed candour and impartiality are seldom found except conjoined with education and knowledge, nor indeed always there, though perhaps the most desirable traits of any; but obstinacy is the almost inseparable attendant on ignorance. So true is the observation of the great Swedish philosopher, that experience alone, when not animated by reason, is void of order, energy, and life.

In dispelling this cloud, these Societies have been of the utmost service; they have, with great propriety, directed their proposals of improvement, as chiefly relative to such things as were likely to be executed by the owners of the lands, who being in general persons of liberal education, were more capable both of judging of the probability of the success of such proposals, and more able to put them in execution.

These improvements have gradually extended to the inferior classes, from experience of the advantages attending them, which has had likewise another good effect in removing, in a great measure, that aversion to improvement and incredulity of its success, which is so common among this rank of people.—By means of these Societies also, the improvements of one country are transmitted to another, and the philosophical experimentalist enabled to judge from analogy of the probability

lity of the advantage likely to accrue from trials of new modes of cultivation. No useful experiment or improvement is likewise lost for want of communication, as the liberal discoverer has hereby always an opportunity of making it public in the most extensive manner, and of trying its success in the most satisfactory method.

Another benefit of these institutions, and that no inconsiderable one, is, that they suggest an useful, rational, healthy, and agreeable pursuit to the country gentleman, and are likely to prevail on many to spend more time at their country seats than they have hitherto been accustomed. It induces them likewise to a more minute examination of their own country, and of consequence increases their attachment.

The great Linnæus, in Sweden, in a work which does him the highest honour, has recommended an acquaintance with one's own country, as the most useful as well as patriotic undertaking. If this be true in Sweden, it is no less so in England; and surely our fertile vales, beautiful mountains, verdant meadows, and lofty woods, are no less inviting or worthy attention than the mountains of Lapland, the forests of Dalecarlia, the heaths of Smoland, or the plains of Scania.

Another public benefit of these Societies is, that by encouraging Agriculture and Arts, they have a manifest tendency to increase population, and of consequence our natural strength. Men will crowd where the situation and circumstances are tempting, and in a few generations will people every country to the measure of its mean subsistence; and, as this is enlarged, so will the numbers of the inhabitants. Nor is the affording the necessaries of life, the only circumstance whereby the inhabitants are benefited: It does more, and what is at least equally conducive both to their morals and their happiness, it provides employment for numbers, and thereby prevents numerous mischiefs, which are almost inseparably attendant on idleness; which last, if suffered to prevail, would render extensive population the greatest misfortune that could befall a country.

Improvements in Agriculture have likewise another advantage they rather are of service to, than injure the health of those concerned in them; which is indeed wisely ordained by Providence to be the case with several other employments that are of the most general use to Society. Thus, the smith, the mason, and the carpenter, are all healthy occupations; whilst those more subservient to luxury, as the gilder, the refiner, and the painter, are all prejudicial to the health of those who exercise

exercise them. The last, and perhaps the greatest advantage of these institutions, is, that they seem calculated, by suggesting modes of employment at home, and encouraging industry, to put a stop to those destructive emigrations of the most useful part of the inhabitants of this country, which have lately happened.—Perhaps too, the liberal sentiments and rational ideas, which all improvements naturally diffuse, may be of no small service in dispelling the delusive visions of ambition, which have tempted so many freeborn Englishmen, of late, to suffer themselves to be sold like beasts in a market, and to exchange their domestic attachments, their moderate and happy climate, their fertile and cultivated country, and mild and free government, for foreign connections, variable and rigorous seasons, gloomy forests, and dreary savannahs, and, what is more intolerable than all, a long period of absolute slavery.

THE HOUSEKEEPER'S DIRECTORY.

To pickle Oysters.

TAKE what quantity you will of pretty large oysters with the liquor, wash them clean from the grit, and put to every three pints of fair water, half a pint of white-wine vinegar, half an ounce of grossly bruised pepper, an handful of salt, and a quarter of an ounce of mace; boil these over a gentle fire, till a fourth part be consumed, taking off the scum; just scald the oysters, put their own liquor into the pickle, and then put them into little pots or barrels, and stop them very close; they will keep, if kept cool, the year round.

To pickle red Cabbage.

Cut the cabbage into thin slices, which must be put into a pickle of vinegar and spice, cold.

To pickle Salmon.

When you have cut the fish into proper pieces, cleanse it from the blood by wiping and pressing it in a dry cloth, then lay it in a kettle of water that is boiling, or a tin fish-plate, so that it may be taken up without breaking, and being boiled pretty well, make a pickle thus:—Take three quarts of wine vinegar, and two quarts of water, boil it up with a little fennel and salt till it will taste strong, scum it and cool it, then lay the fish in a convenient vessel, and pour the pickle on it pretty warm. The same direction will serve for Sturgeon, leaving out the fennel, and for other fish.

To

To make Mushroom Ketchup.

Pick and clean the mushrooms well, but do not wash them, put them into an earthen pipkin, throw a little salt over them, and cover the pot close; place them in an oven after the bread is removed, and let them remain six or seven hours; then press them a little, and pour off the liquor, which must be put over fresh mushrooms and baked as the first; afterwards pour off the liquor without pressing them, and boil it very well, with salt sufficient for keeping, till it is half consumed; when cold bottle it up, and keep it in a place moderately cool.

To pickle Flowers for Sallads, Garnish, &c.

Take an equal weight of flowers and sugar, put them into a gallipot, and put to every pound of sugar a pint of vinegar.

To pickle Walnuts.

Soak them in salt and water for ten days, changing the water every day; take them out and dry them with a coarse cloth, and pickle as they do melons.

To make Ketchup.

Take a pint of the best white-wine vinegar, put it into a wide-mouthed quart bottle, then take twelve or fourteen cloves of shallot, peeled and bruised, put them into the vinegar; afterwards take a quarter of a pint or more of the strongest red port, let it boil a little, then take twelve or fourteen anchovies, wash and bone them, and dissolve them in the wine, when cold, put them into the vinegar bottle, stop it close with a good cork, and shake it; take the same quantity of wine, or more, put into it a spoonful of white pepper, just crack'd or bruised, five, six, or seven races of ginger slit, half a spoonful of cloves, bruised, five or six larger blades of mace, boil them over the fire till they have received the strength of the spice, when almost cold, slice into it a couple of large nutmegs, when quite cold put nine or ten bits of lemon peel into it, put that also into the bottle, then take a piece of a large found horse-raddish root, scrape it thin, and put it into the bottle, stop it close, and shake it well together; shake it once a day for ten days, after which time you may use it, two or three spoonfuls to a pound of butter, for fish sauce.

[*To be continued.*]

Reference to the Copper-plate of the Hand-mill.

THIS mill consists of a steel notch'd bar and roller, regulated by back screws, so contrived as to make it fit for the admission of the largest beans, or the smallest grain.

The seed is regulated by a wooden slider within the hopper, as appears by the print, and the box underneath draws out for the more convenient emptying of it. It is an excellent malt-mill, and very useful for grinding barley for hogs, or oats for horses: It is exceedingly expeditious, and works with very little labour.

JAMES SHARP.

TO THE EDITORS OF THE FARMER'S MAGAZINE.

GENTLEMEN,

THE Secretary of the Agriculture Society in Norwich, having favoured me with the following letter, on the Norfolk method of setting wheat, and the success and advantage attending that excellent practice; I doubt not but you will think it properly adapted to, and worthy a place in your very useful Miscellany. It was written by a very ingenious Norfolk gentleman (Nockold Thompson, Esq.) to the President of the Norwich Society in September, 1774; and since that time setting wheat is become general throughout the county of Norfolk. It were much to be wished, that at a time when wheat bears so high a price, the prodigious annual waste occasioned by sowing it in the common broad-cast method might be prevented; the general practice of setting it throughout a county where agriculture is confessedly arrived to an higher state of perfection than in most others, ought surely to have some weight with the Farmers in other places, the western counties especially, as the lands therein are in general better adapted to this mode of cultivation than in divers other parts of this kingdom.

BATH, Oct. 22.

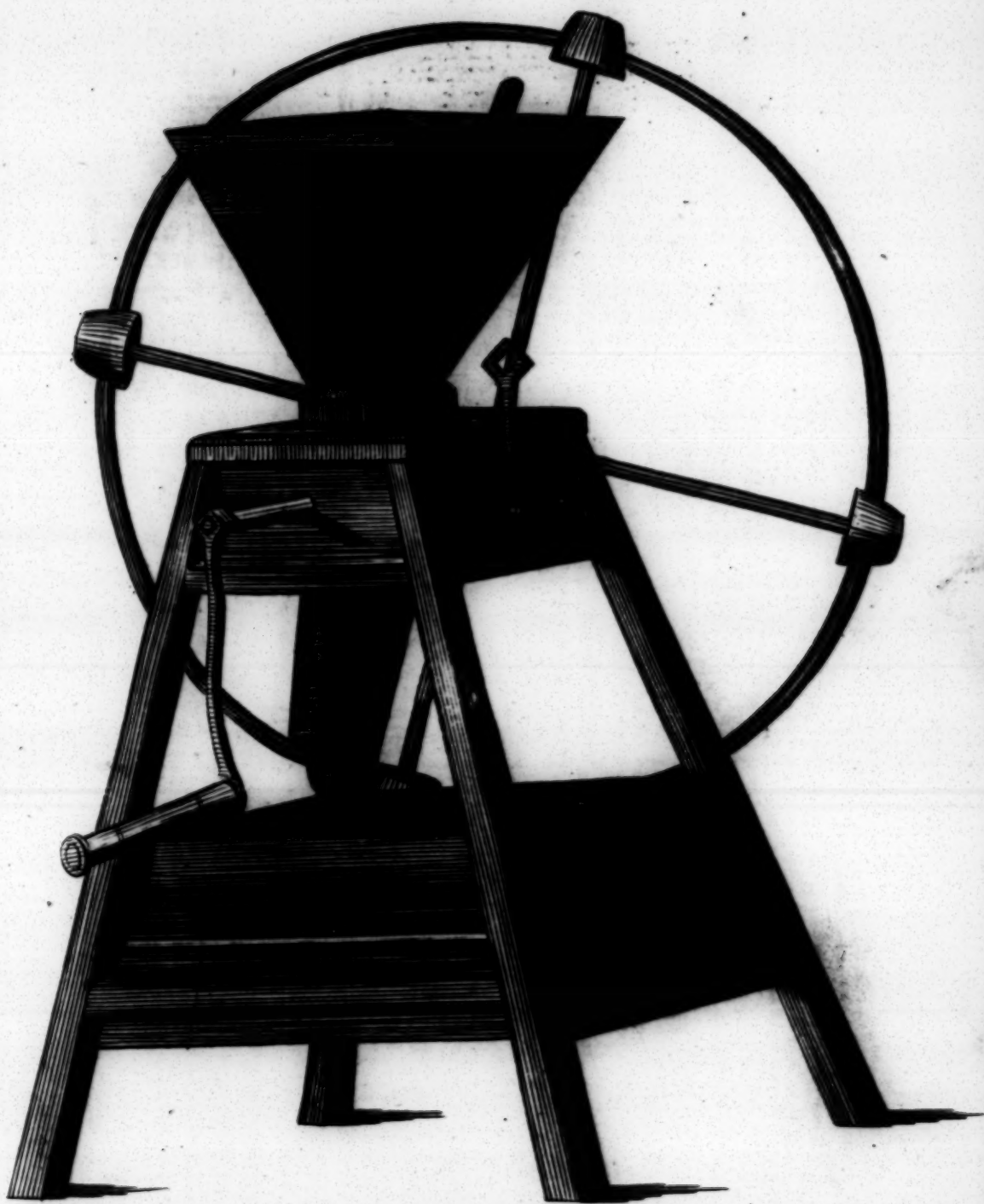
I am, &c. &c.

EDMUND BACK.

To the President of the Norfolk Society for the Encouragement of Agriculture.

S I R,

THE intention of our Society is for the public utility, to improve husbandry, and increase crops; I am desirous through your hand to communicate to the Society, and the public, the result of a trial I made for comparison of wheat set



*Hand Mill for Splitting of Beans,
Grinding Malt, Barley, Oats &c.*

Made & Sold by James Sharp London

Miles Sould Borough

1871

1872

1873

set and sown broad-cast: In the last season I began setting about ten days before new Michaelmas, and I finished a few days after old Michaelmas; and in the last piece I began setting the wheat, but reserved one part which I sowed broad-cast; it was on clover of one year's laying, the land was plowed and sowed as near the same time as possible, and with the same seed corn; it was also equally manured, and also cut at the same time, that is about the 13th day of August last, and abroad twelve days, had some small showers, but was all carried into the barn in as fine condition as could be, and threshed on the same day; it was better land than my other wheat grew upon, my soil in general is light, mixed with a loam, and has been marled with more than forty loads an acre, but this piece has more loam in it, yet the crop was less and the grain smaller, which I can attribute to divers causes, that is following too soon a former crop of wheat, also, although it was dunged previous to the sowing, yet it had no top dressing in the spring as my other wheat had, and also being last sown: The seed of the set wheat was under three pecks to the acre, and the sown wheat about three bushels; the expence of setting was eleven shillings an acre, and the seed saved amounted to twelve shillings an acre, which more than paid, besides one man's labour saved in sowing. On comparison of the wheat set and sowed, that which was set was when growing of an equal height; the other had much under corn of different growths, and when they were threshed, according to the most accurate experiments I could make, the set wheat yielded one eighth part more than the sown in quantity, and was a very even sample, and very bright; the other was not only (the best of it) less bright, but was an unequal sample, the grain of different sizes and colour, and the set wheat exceeded the sown about eight pounds in the comb; I believe I might say more, but I chuse rather to estimate it under than to the height of my computation.

From which I would recommend it to my countrymen, to set their wheat early, and to cut it sooner than is done by almost any body. I sow my summer corn early, by which means I began my harvest on the fourth day of August, and finished it on the twenty-fourth; one piece of oats was cut near a week sooner; all my other corn was cut down in the first ten days of my harvest, it lay abroad in the field, some for a fortnight, but the least for more than a week, had one great shower, and some small rains, and was all got up in the best order that could be; and one hundred acres of wheat,

barley,

barley, oats, and peas housed or stacked, on or before the 24th day of August last. This year I intend to begin setting about the 19th instant.

10th Sept. 1774.

And am, sir, yours, &c.

NOCKOLD THOMPSON.

ART. XIX. *On the Howard, or large Bedfordshire Potatoe.*

[By Dr. HUNTER of YORK.]

BY all the experiments that have been made, the Howard Potatoe is found to produce the largest crop; on that account they are chiefly used in feeding of cattle. In two beds four feet wide and 200 feet long, I planted in a common field a sufficient number of sets of this kind of potatoe, and managed them by the horse hoe; the produce was sixty-four bushels, each bushel heaped, weighing about seventy pounds. My cattle eat them boiled with as much eagerness as the best sorts, and came on well with them. I have built a boiling-house on Mr. Young's plan, and during the whole winter have boiled potatoes for my cattle; for the fattening ones I mix ground oats with them, and for the milk cows, malt-dust; and dare venture to affirm they are much more profitable than either cabbages or turnips. Once when my potatoes grew low I desisted giving them to the milking cows; immediately, though fed with the best hay, they fell off amazingly in their milk.

I therefore began again, and in a week's time they gave better than one-third more butter; I own this accidental discovery gave me much satisfaction, as it confirmed my opinion, that potatoes boiled are an excellent winter food for cattle. Their culture is not so difficult, at least not so precarious, as either turnips or cabbages; their value is superior, and there is no risk of their giving any disagreeable taste to the milk or butter: Add to this the vast increase of the Howard potatoe, and its equality with the best sorts when used for cattle.

My gardener cut a large potatoe into nine parts, which he planted with dung in a drill in the garden; by earthing up and laying the shoots, he produced 575 sizeable potatoes, which weighed 81, 81b. Another of my servants produced in the field, seven stone of good potatoes, from the same number of sets. Though this experiment cannot be executed in its full force in an extensive scale, it ought notwithstanding to be imitated as nearly as circumstances will allow; it shows

the

the most distinguishing manner the use of clean and careful husbandry.

On the 14th of April I cut a large white potatoe into seventeen sets, which were planted in as many hillocks at the distance of four feet; in the course of growing the plants were earthed up, and on the 14th of October the crop was taken up; the produce was ten pecks of sizeable potatoes.

At the time this experiment was made, I had several hillocks, into each of which I put three or four sets of the same kind of potatoe; but upon the most careful examination I could not observe that these hillocks produced a greater crop than the others planted with a single set. Hence it is obvious that the potatoe spreads its roots most kindly when least crowded.

ART. XX. On Siberian Spring Wheat.

[By Sir DICKEY LEGARD, Bart. of Ganton.]

ON the second of April, 1771, I drilled two pecks of Siberian wheat on one-third of an acre, in rows one foot asunder; previous to sowing, the wheat was limed in the usual manner; the land a rich loam, which had borne a crop of turnips fed off with sheep; the turnips were fine ones, and the land, which lets at 16s. an acre, was in such good order, that I judg'd one plowing a sufficient preparation for the wheat crop. The season was at first unkindly, and the corn came up very thin, with many weeds among it; it was hand hoed, and soon after flourished and tillered amazingly. Though it appeared fine about the time of maturity, there were notwithstanding, many weeds among it, and it did not seem quite a full crop. In the beginning of October the corn was cut, and on the 19th of the same month, threshed; the produce was twelve bushels and two pecks, viz. twenty-five for one. This appears a considerable produce on the seed sown; the grain was well ripened, and not inferior to any of the common wheats sown at the usual time.

This kind of wheat seems a real acquisition to husbandry, and yet some common white wheat, sown at the same time, had the appearance, whilst growing, of producing a larger crop, only it did not ripen so kindly, and was also later in ripening. But if this Siberian wheat was superior to the common spring wheat, it was greatly inferior to some wheat of Switzerland, sent me by the Society of Arts, and sown on land contiguous to the above, and at the same time. This last was

fine a crop as one could look on, ripened a fortnight sooner than any of my spring wheats, and was as early as any of the autumnal sorts.

ARTICLE XXI.

TO THE EDITOR OF THE FARMER'S MAGAZINE.

S I R,

A Pickle for wheat, which I prepared last year, has succeeded this season in the most satisfactory manner. I prepared seed for seven acres; in the crop of which, this year, there is not one stalk of smut. In this, however, the influence of the pickle might be doubted, as the seed was entirely pure. In order, therefore, to ascertain the matter, I took six quarts of old wheat, so much infected, that upon rubbing a small quantity between the hands it left them quite black. Two quarts I sowed without any preparation, a third part of the produce of which was smut. Two quarts I kept in pickle forty-eight hours; the produce of them was quite pure. The remaining two quarts I kept in a close vessel, in which was a sulphur candle burning for the same time; The effect of this experiment was, that not one grain of these two quarts ever grew. From this it appears, that the smoke of sulphur is as fatal to vegetable as animal life.

I am, sir, your humble servant,

Oct. 10, 1777.

WM. STEEL DICKSON.

N. B. The pickle alluded to is made of salt and water, so strong that an egg will swim in it. The wheat to remain in pickle two days; then to be spread out on a floor, and mixed with dry slacked lime, till the whole is coated over.

ART. XXII. *A Receipt for a Surfeit or Cold in a Horse.*

TAKE two pints of ale, boil and scum it; and then add two or three heads of garlic well bruised; boil them till a third part of the ale is consumed, and then put in bay berries beaten or bruised small with an ounce of diapente; of elecampane root, half an ounce; London treacle, one ounce; of honey four spoonfuls; of fallad oil, six spoonfuls; boil them together and strain off the liquor for a dose. Ride the horse after he has taken it for some time, then cloath him up well and warm. At noon give him a mash, or the white water, repeat this drench every third day, and give white water every day if the horse be feverish or full of blood, bleed him between the drenches. You may make a gentle purge of this drench by adding six drams of aloes in powder.

POETICAL ESSAYS.

The FALL of the LEAF.

Nunc regnat Autumnus.

THE year its course has nearly run,
Life-seeming Spring, and Summer's sun,

Have held successive sway;
Disrobing Autumn now appears,
Of arid death the signs she bears,
Portending its decay.

New falling foliage owns her pow'r,
The trembling branch its mortal hour,
Seems drooping to confess;
Its leafy honours quiv'ring wait
The blasts, which seal their final date,
And general doom express.

Thrown from their verdant state on high,

In with'ring heaps neglected lie
In ruin on the ground;
True emblem of man's fleeting state.
Whose period, in vital date,
Identical is found.

Spring, Summer, Autumn, Winter, he
Knows, during his mortality,

And each successive change;
His Spring and Summer quickly fly,
Autumnal languors following nigh,
His wisest plans derange.

Gloom-marked Winter's chilling sign,
Asserts its power in age and pain,
And points him to the tomb;

Thrice happy they, whose lives, well past,

Joyfully meet the scene at last,
And graduate their doom:

Whosoever yet, from wilful sin,
Hath issued pure, and govern'd been
By Virtue's mild control;

They, as amidst prospects clear,
Terrestrial leaves, nor need to fear—
The winter of the soul!

OB. 8, 1777.

G. S. & Co.

HENRY and EMMA.

IN a fair mansion cloath'd with wood,
Dwelt, as old stories tell, the Nut-
brown maid.

What bard, but lovely Emma's beauty
sung?

What castle-hall but Emma's beauty
rung?

For Emma, su'd the wealthiest of the
And battle-knights contended for a
smile;

In vain those profer'd, there in com-
"Young Henry of mankind was lov'd
alone."

Thro' moonlight walks, when all in
On Henry leaning, fearless would she
stray.

Yet thus severe, he ties the gentle
In which he fear'd another bore a part.

HENRY.

If ever yet, you held me dear,
In pity to my wretched state,
Shed, ere we part, one pitying tear,
Then—struggle to forget my fate!

For O! I'm banish'd, and some hold
Obscurely wild, must hide this head;
A goat-skin fence their limbs from cold,
Where oft a silken vest has spread!

I go for ever from thy sight,
An exile sad in woods to dwell!
On thee, O fit my full rings light!
My lovely Emma fare thee well!

Distraction in her air, tears in her eyes,
The tender fair, in fond distraction lies.

EMMA.

If 'tis decreed that thou must go,
I'll be partaker in thy woe;
A portion in each sorrow bear,
Nor shrink it hard with thee to share;
With aches I'll roam the hostile hill,
Tho' banish'd, thou—art Henry still!

Pleas'd Henry heard, then fondly to her
sprung,

Press'd her bright lips, and to her bosom
Remov'd her fears, reveal'd his hidden
birth,

And whilst he ey'd her beauty, bless'd

HENRY.

Bards shall to future ages hand thy name,
And to succeeding Emmas be it said;
O wou'd you imitate the first in fame,
Behold a model in the nut-brown maid!

The

ODE ON INTEMPERANCE.

By Miss E. E.

PARENT of ever-smiling peace,
Of blooming joys and tranquil ease,
And freedom fair divine;
Thee Independence, bland I sing!
For thee I fly on fancy's wing,
And thee I invoke th' æonian nine.

A muse unskill'd in learning's lore,
Untaught her mazes to explore,
Thy kind attention claims;
Oh! smile propitious on her lay;
With eye benign the toil survey,
Nor slight her feeble aims.

Thee, thee, the heroine of her song!
She soars above the vulgar throng,
Disdaining vulgar art;
In spite of snarling critic's rage,
A charm resistless warms the page,
Dictated by the heart:

O nymph belov'd of human-kind!
Revered by the generous mind,
That scorning flattery's voice,
Disdains to breathe her incense forth,
To extol th' imaginary worth
Of fortune's fickle choice.

Remote thy seat from pining want,
And meagre famine's hollow haunt,
Black misery's abode;
Alike remote from glaring courts,
Where splendid servitude resorts
To range ambition's road.

With competence and sweet content,
In solitude serenely spent,
Thy moments calmly flee;
Regardless of th' avenging storm,
That oft the face of day deform,
On life's tempestuous sea.

Thou, guardian of the heav'n-born soul!
Her empire free from man's controul,
And wealth's imperious frown;
Thy noble charge in state sustain,
Unw'd by tyrant powers reign,
Nor sink supinely down.

Let virtue rest in reason's arms,
And potent truth's persuasive charms,
In bright perfection blaze;
And bid the mind in grandeur rise,
Superior to each mean disguise
Of her ennobl'd race.

Enliven'd by the genial ray,
The glowing will shall wing its way
To wisdom's sacred shrine;
And there in humble posture bend,
Implore the goddess to attend,
And crown each bliss of thine.

Without her aid, how vain the joys
That flow from transitory toys,
To dazzle human sight!
'Tis her's in triumph to o'erthrow
Wild folly's vain delusive show,
And give supreme delight.

STANZAS on FORTITUDE.

WHEN things go cross, as oft they
will,
And rubs on rubs are pressing,
A mind prepar'd for every ill,
Is sure a solid blessing.
Without this strength within to bear
The evils which surround us,
We suffer trifles light as air,
Most cruelly to wound us:
But with this useful armour clad,
Assisted by volition,
We learn to pick good out of bad
In this or that condition.
How many wretches, every hour,
Groan for a slight affliction,
Depriv'd of a repelling power
By shameful dereliction?
Far diff'rent from th' intrepid few
By calmness ne'er forsaken,
Who tho' the frowning fates pursue
Are never overtaken.
How many of the blackest woes,
Which now oppress and gail us,
Might we successfully oppose,
If fear did not appall us?
By fear appall'd, chill'd reason shakes,
We lose our mental vigour,
And ev'ry harmless object makes
A formidable figure:
So children, taught by nurses, shrink
By night at fancied evils,
And feel their flutt'ring spirits sink
Alarm'd by ghosts and devils.
Some tempers lapse into the spleen,
In clear or cloudy weather,
But happy he who can, serene,
Endure the approach of either:
To grumbling we should ne'er give way
In sickness nor in sorrow,
For tho' the sky is dark to day,
It may be bright to-morrow.
In life thro' ev'ry varied stage,
In every rank and station,
In youth, in manhood, and in age,
While all is in mutation,
He who (with steadiness of mind,
And passions ne'er uneven)
Is ever to his lot resign'd,
On earth enjoys an heav'n.



THE
FARMER'S MAGAZINE.

A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]

American Husbandry.

FLORIDA. **T**HIS country was first discovered in 1497, by John Cabot, a venetian, employed in the service of Henry the seventh of England; but more completely discovered in the year 1512, by Inan Ponce de Leon, a Spaniard, who gave it the name it now bears, and afterwards it was annexed to the Spanish dominions by Ferdinand de Soto, in the year 1539; at the last peace it was ceded to England, and divided into the governments of East and West Florida. Florida is situated between the 82d and 105th degrees of west longitude, and between the 25th and 40th of north latitude, being about 1400 hundred miles in length, and 900 in breadth: It is bounded by the gulph of Mexico on the south; on the north by the Apalachian and Cherokee mountains, and great lakes; on the east by Georgia, and the Atlantic; and on the west by the Mississippi, which separates it from Louisiana.

Florida is a flat sandy country, the air in general unwholesome and very hot, subject to rains, though some parts rather more fertile and healthy.

The animals are the same as in Georgia and Carolina, and the vegetables are Indian corn, &c. in some parts hemp, flax, vines, prunes, limes, oranges, lemons, and a delicious fruit called tuxa, to which has been given the name of the cordial julep; besides these there are found indigo, saffras, cotton trees, oaks, pines, laurels, chesnuts, &c.

LOUISIANA. The climate of Louisiana resembles that of the back settlements of Carolina, but is fewer frosts in summer, or cold in winter; the air is clear and dry; and the land is considerably elevated above the water, so that there is scarcely a marsh or swamp in the whole country; and although it almost incessantly rains in the Floridas, it very seldom rains on the high lands bordering on the Mississippi: The soil is equal to the climate, and produces vines in the greatest plenty; the red and evergreen oak, cedar, ash, elm, beech, lime, &c. Sarsaparilla grows here as well as in Mexico; hops are found in many parts; hemp grows naturally, and flax also flourishes to great advantage.

Vines, says du Pratz, are so common in Louisiana, that which ever way you walk from the sea-coast for 500 leagues together, you cannot proceed an hundred paces without meeting with one.

The productions in agriculture are maize, wheat, rye, barley, peas, beans, French beans, tobacco, and indigo.

They have abundance of wild cattle, particularly deer and buffaloes; besides which they have horses, cows, hogs, sheep, &c. The fruits are grapes, plumbs, peaches, oranges, lemons, figs, apples, &c.

NEW MEXICO. This country is situated between the 23d and 43d degrees of north latitude; and between 94 and 126 degrees of west longitude; being about 2000 miles long, and 1600 broad; it is bounded on the north by unknown lands; on the south by old Mexico; on the east by Louisiana; and on the west by the south sea. The air is in general clear and healthy, and the climate pleasant, the summers warm but not sultry, and the winters sharp but supportable. The land is fruitful, and the face of the country beautifully diversified with flowery plains, and gentle eminences, with woods and lawns, intersected with rivers and streams of water; a great variety of wild and tame animals are found in new Mexico, as beavers, buffaloes, wild hogs, lions, wolves, horses, mules, asses, cows, sheep, goats, &c. among the birds are peacocks, bustards, geese, cranes, vultures, cormorants, quails, linnets, larks, &c. &c. This country yields also mines of gold and silver; turquoises, emeralds, and other precious stones, are also found here.

CALIFORNIA. This country is divided from Mexico on the east by a gulph which bears its own name; on the south and west it is bounded by the pacific ocean. The air is temperate,

perate, and the country indifferently fertile. Among the vegetable productions are a vast variety of excellent fruits, particularly pistachios, figs, pommons, grapes, and melons: They have a particular kind of tree growing here which not only bears a delicious fruit, but also an excellent perfume: and a species of manna grows here on a kind of rose-tree, which has all the sweetness of sugar: The gulf affords one of the richest pearl fisheries in the world, and in the middle of the country native salt is found in great quantities.

[To be continued.]

ARTICLE I.

To the EDITOR of the FARMER'S MAGAZINE.

Mr. SYLVAN,

MY last extract upon the advantages derived from the cultivation of Cabbages, meeting your approbation, hath urged me to proceed a little further for benefit of my fellow plough-shares, as the welfare of individuals in general (I think) reasonable christians should advance as far as their abilities extend. As to my real address, which you desire to be informed of, I cannot at this period think of acquainting with, as my present situation in bondage would render it highly inconsistent, but the few matters with which I am now acquainted, I shall be presumptuous enough at my vacant hours to lay before you, and whatever I think may prove interesting or advantageous to your inspecting friends.

Having removed from a town, as it were, to a romantic, sweet situation, where virtue and happiness go hand in hand, and as Milton says,

"Gentle gales,

"Fanning their odoriferous wings, dispense

"Native perfumes, and whisper whence they stole

"Those balmy spoils."

Shall be more constant in my address, and now offer a dissertation on the culture of Timothy Grass, for the Farmer's Magazine.

Northumberland,

Yours, &c.

Sept. 16, 1777.

J. C. H.

On the Cultivation of Timothy Grass.

THIS plant was first taken notice of in North America, and seems to be a native of Virginia, where it grows without cultivation, to a great height, on moorish swampy grounds.

It thrives most in low, damp, marshy grounds; for in such soil and situation it will produce a fine turf in three weeks from the time of sowing the seed. It is very luxuriant, grows to a considerable height, and has in some sort the appearance of wheat, or rye, having a broad blade or leaf.

The following experiment which was made some time since, shews that it exceeds most other grasses in sweetness. A square piece of land was ploughed, and reduced to a very fine tilth; it was then divided into four equal quarters or parts, on the first was sown a proper quantity of Lucerne seed; on another quarter, saintfoin; on a third part, clover; and on the fourth, or remaining quarter, was sown the seed of Timothy Grass. These several plants were suffered to grow till they were in a condition to be pastured by cattle.

When they were arrived at a proper growth, horses, black cattle, cows, and sheep, were promiscuously turned into the field, with an intent to observe which of the grasses the several sorts of cattle would soonest take to, it not being at all imagined they would take to one kind. However, this was the case; for the Timothy Grass was eaten by them quite bare, before the other sorts were touched, though they were at liberty to range over the whole field.

It may not be improper to add, that they are nearly as fond of it when dried and made into hay; but when it is intended for this use, it should always be mown when in full sap, just before it flowers; for if it is left longer before it is cut, being so luxuriant and quick a grower, it becomes harsh, and is much drier than when it is cut in its prime.

I would by all means recommend this plant to all improvers of low, swampy ground, as I know of no grass that is so well adapted to bogs and marshy lands as this, the grass being excellent either green or dry.

It is not at all to be doubted (I think) but that with a little observation, and a few experiments made with accuracy, certain grasses might be found adopted to every soil, and every situation. A great deal depends on the judgment of the Farmer, exercised in the arrangement of his crops; and the nature of the soil, is, or ought to be, principally consulted, for such artificial grasses as would suit a light soil, would ruin the crop if sown on clay.

ARTICLE II.

For the FARMER'S MAGAZINE.

Mr. SYLVAN,

IF you deem the following not inconsistent with your plan, you may insert it in the Farmer's Magazine.

Northumberland,

Yours, &c.

P. B——n.

J. C. H——n.

As the Farmer, like the Chemist, should lose none of his materials or nostrums, (if I may be allowed the expression) but make even his washings, runnings, and residuums, turn out to his advantage; I shall give an account of an experiment we have practised, and leave the reader to draw the inference. In our fold-yard, we have what is generally seen in most Farmer's yards, recesses or pools, as reservoirs of dung and water. These reservoirs in wet seasons, are continually running over, on which account we have runners or conductors, for conveying this rich fluid upon the land.

That the experiment might be evidently elucidated, it was tried in March, on a little inclosure containing an acre or upwards, and upon some land of wheat; where in a small time I found a considerable increase in growth both of grass and of grain; and at the hay-time, and harvest, the one and the other were much better crops than what the same land produced that were not so manured.

As the expence of making those runners, or conductors are so trifling, and the glaring advantage which will most evidently ensue, certainly must make the sanguine improver for his own self-interest arduous in collecting this valuable essence.

This manure might be flooded to great advantage, on land that is fresh sown with barley, oats, or any other kind of grain, but on grass it should only be thrown on in winter-time, when the rains will wash the salts off the blade; or in the spring when the lands are laid up for hay, as the cattle will not feed on the grass while the dung or salts adhere to the blade of it.

This essence should be conveyed off when it is of a deep brown colour, and strongly impregnated with salts; then its operations will soon demonstrate the utility and profit advancing forward for the benefit of the cheerful improver.

If any of your readers would give a solution to the following dubious, though important question, it would be doing a noble action for the benefit of the public:

At what age ought animals of each various kind to be fattened with

with the greatest facility? And at what crisis of life is the meat of each particular kind in the highest perfection, admitting of it being equally fattened?

ART. III. *The History of the Honey-Guide, or Cuculus Indicator.*

[By Dr. JOHN REINHOLD FORSTER, F. R. S.]

THIS curious species of cuckow is found at a considerable distance from the Cape of Good Hope, in the interior parts of Africa, being entirely unknown at that settlement. The first place where I heard of it was in a wood called the Groot Vaader's Bosch, the Grand Father's Wood, situated in a desert near the river which the Hottentots call T'kant'kar. The Dutch settlers thereabouts have given this bird the name of Honigwyzer, or Honey-guide, from its quality of discovering wild honey to travellers. Its colour has nothing striking or beautiful, as will appear from the description annexed; and its size is considerably smaller than that of our cuckow in Europe; but in return, the instinct which prompts it to seek its food in a singular manner, is truly admirable. Not only the Dutch and Hottentots, but likewise a species of quadruped, which the Dutch name a Ratel*, are frequently conducted to wild bee-hives by this bird, which as it were pilots them to the very spot. The honey being its favourite food, its own interest prompts it to be instrumental in robbing the hive, as some scraps are commonly left for its support. The morning and evening are its times of feeding, and it is then heard calling cherr, cherr, which the honey-hunters carefully attend to as the summons to the chase. From time to time they answer with a soft whistle, which the bird hearing always continues its note. As soon as they are in sight of each other, the bird gradually flutters towards the place where the hive is situated, continually repeating its former call of cherr, cherr; nay, if it should happen to have gained a considerable way before the men (who may easily be hindered in the pursuit by bushes, rivers, and the like) it returns to them again, and redoubles its note, as if to reproach them with their inactivity. At last the bird is observed to hover for a few moments over a certain spot, and then silently retiring to a neighbouring bush or other resting-place, the hunters are sure of finding the bees-nest in that identical spot, whether it be in a tree, or in the crevice of a rock, or (as is

* Probably a new species of Badger.

most commonly the case) in the earth. Whilst the hunters are busy in taking the honey, the bird is seen looking on attentively to what is going forward, and waiting for its share of the spoil.—The bee-hunters never fail to leave a small portion for their conductor, but commonly take care not to leave so much as would satisfy its hunger. The bird's appetite being only whetted by this parsimony, it is obliged to commit a second treason, by discovering another bees nest, in hopes of a better salary. It is further observed, that the nearer the bird approaches the hidden hive, the more frequently it repeats its call, and seems more impatient.

I have had frequent opportunities of seeing this bird, and have been witness of the destruction of several republics of bees, by means of its treachery. I had however but two opportunities of shooting it, which I did to the great indignation of my Hottentots. From those specimens (both of which are supposed to be females) I have made the description.—The inhabitants in general accuse the same bird of sometimes conducting its followers where wild beasts and venomous serpents have their places of abode: This however I never had an opportunity of ascertaining myself; but am apt to believe such cases to be accidental, when dangerous animals happen to be in the neighbourhood of a bees nest.

Whilst I staid in the interior parts of Africa, a nest was shewn to me which some peasants assured me was the nest of a honey-guide. It was woven of slender filaments or fibres of bark, in the form of a bottle. The neck and opening hung downwards, and a string in an arched shape was suspended across the opening, fastened by the two ends, perhaps for the bird to perch upon.

ARTICLE IV.

To the EDITOR of the FARMER'S MAGAZINE.

SIR,
THOUGH the following address is not formed upon the plan of your useful Magazine, yet if you think it deserving of a place, please to insert it; and oblige,

Your constant reader,

To the LEGISLATURE of BRITAIN.

IF the true wealth of a country consists in the number of its inhabitants; if the preservation of the human species, is an object of desire to the feeling heart; certainly every scheme which

which promises to eradicate the most fatal diseases, should be considered with attention. The small-pox drags more persons to the grave than any other distemper; it is a most virulent and universal plague. Inoculation has been introduced to stop its baneful progress; but though I do not dispute that it is attended with beneficial effects to particular persons, yet its general utility is very dubious.

One reason industriously propagated for encouraging this practice is, because it is said to introduce a good pock. This is not the fact, the same matter in different bodies will produce most virulent and excellent effects. Infection extracted in hospitals from a person who has died of this disease and applied to another, has produced a most favourable pock, and from repeated experiments it is well known to the most able physicians, that the matter is of little or no consequence.

Secondly, it is said, that the infection in the natural way first attacks the lungs; but in the other the infection is introduced in a less dangerous manner. This is perhaps of little consequence; the disease is soon master of the whole body; it is easy to lay an additional load of pocks on any part, by adding an extraordinary degree of warmth, without regarding where the infection first made its appearance.

The principal use of inoculation seems to arise from its being in the power of art previously to prepare the patient and expel every bad humour.

Another advantage it possesses along with the natural pock from the cool regimen now prescribed, in place of the destructive heat which ignorance formerly enjoined.

To say that none die by inoculation, is contrary to experience, the numbers are perhaps concealed from design; but every one can recollect particular instances, and at any rate, the measles, the teething, and many other distempers may appear after the operation and making a joint attack that may frustrate the abilities of the most expert inoculators.

I shall not pretend to determine whether matter taken from a person subject to latent disorders, or a foulness of blood, may not communicate more infections than one. I shall only observe, that the operation is not of use to the community in general; from the bills of mortality in London it will appear, that more persons die of this distemper than ever. The reason certainly is, inoculation spreads the disease: and if this be the case, a few are preserved at the expence of their fellow citizens.

If

If there is a method to eradicate a most malignant plague, it is the duty of every person to propose it; for this reason an obscure individual presumes to address the British Senate. I confess a fatal calamity has turned my thoughts on this subject; yet, I would exult if my private misfortune proved beneficial to my country.

It is better to prevent than to cure a disease, and on this foundation my plan is laid. An insular situation is attended with great advantages; many contagious diseases to which the continent is subject may be expelled with attention. This is one of them; let a generous effort be made, and success will follow. The plague used often to depopulate Britain. Wise regulations and salutary laws have put an entire stop to its ravages. Yet when these laws were proposed, a theorist might have argued on the impossibility of guarding against the subtil poison; it lurks in the smallest particle of wool; a rag of linen may prove the death of thousands. The small-pox is much less infectious; it is therefore more easy to banish it for ever from this kingdom; and I conjure the senate, who are only able, to pay some attention to a proposal intended for the public good, though conveyed through the medium of an anonymous writer.

Let the justices of the peace be enjoined to order every master of a family to give in a list of those who are at present infected in his house; whoever makes not a complete discovery shall be subjected to the most rigorous penalties. Let a particular district in each county town, airy and healthy, be appointed by these justices; let the inhabitants be warned to remove for three months, and the damages they sustain may be assessed by a jury. Let the sick be conveyed to this spot, and lodged in apartments suitable to their rank, with one of their connections whom they may prefer; let several experienced surgeons be named to attend them. Let their habitations be surrounded with soldiers who have had the infection, and after supplying them with provisions and necessities of all sorts, let none be allowed to enter, except more patients, or depart for a complete month, under the penalty of death; when the month is elapsed, all those who are completely cured, may be allowed to go out after proper precautions. Those from whom any contagion may be received, may remain, and those abroad, on whom the infection has appeared, may be introduced. There are to obtain their freedom on obtaining a certificate from their surgeon of a complete cure. New patients are still to be admitted;

and after the third month, if vigilance and activity be used, the infection may be expelled the whole island.

To prevent a new introduction will not be difficult: As this disease cannot be concealed, but appears in every part of the body within nine or ten days, the officers at the ports may be ordered to report if any sailor or passenger aboard ships coming from abroad are infected; and if there be any doubt, a surgeon may be called to determine the difficulty.

An hospital in every county may be erected for receiving any such persons as have caught the contagion, or any person who may be infected from any unforeseen accident. Neat and genteel apartments may be fitted up for those of the better rank, who will pay accordingly; and the most severe penalties may be inflicted on those who, from prejudice or pride, attempt to conceal the distemper. Every expence will be defrayed by those who can afford it for themselves. The benevolent and humane will relieve the poor and needy.

Ye British Senators, do not consider my proposal as Utopian, because it is new; shew the noble example of expelling this noxious distemper. The Sovereigns of the continent will soon imitate you; and the small-pox, with other plagues, will be driven to the bigotted Mussulman, who meets his fate without attempting to shun it.

I know this proposal is against the interest of the physician, but what I value much more, it is intended for the benefit of mankind.

Homo sum, nihil humani a me alienum puto.

T. B. C.

ART. V. General Observations on the Management of Lands.

To the EDITOR of the FARMER'S MAGAZINE.

S I R,

I Have been a constant reader of your useful Magazine ever since it was published, and turned a variety of excellent hints contained therein to my own advantage. The late steps you have taken in requesting the correspondence of practical Farmers in different parts of the kingdom were certainly very proper, and I doubt not but many gentlemen will joyfully contribute to your assistance, in furnishing you with experiments and modes of practice which were attended with success. He who has it in his power to communicate useful knowledge, and withholds it from the world, is a niggard of the worst kind, and deserves little regard from his countrymen.

But

But to the subject; I am a considerable Farmer in a county where great improvements have taken place within the last twenty years. My neighbours were very unwilling to suppose any person understood the management of land better than themselves, and consequently treated (at first) almost every new mode of practice, as the idle whims of book-learned theorists; but the apparent success which attended various attempts to introduce new and better methods of cultivating land, has at length opened their eyes and ears, and an improved system of husbandry is prevailing in most parishes.

It is not my intention in this letter to confine myself to any particular subject; I shall therefore give you a few general maxims that hold true universally, let the condition or circumstances of any estate be what they may.

It is the proper business of gentlemen to make new experiments; and of the Farmers in general to follow those which repeated experience has proved generally successful.

First. Never plough up any pasture or meadow land for corn while the present annual value is as great as can reasonably be expected from tillage. This very seldom answers where pasture land is worth more than twenty shillings per acre: the reason of this is obvious; because it would be running a risk without any prospect of advantage. Good sweet fine pasture is not to be equalled by any artificial grass; cattle of all sorts prefer the former to the latter, and it is well known to the Farmers and Graziers, that they improve faster on sweet natural grass, where they can have plenty, than upon any other green food whatever, Lucerne excepted.

Secondly. Good deep ploughing, (where the soil will admit) harrowing, and rolling: These must be timed well to reduce the earth to a competent fineness. Some lands require these operations to be repeated much oftner than others, but in general, the more the soil is broken, and the nearer it comes to perfect fineness, the better will be the crops, of whatever kind.*

Thirdly. To keep the land clean, and as free from weeds as possible: This is chiefly to be effected by duly observing the last article; for weeds cannot attain much head where the land is frequently ploughed and harrowed. When through neglect land becomes very foul, give it a summer fallow, especially if anything is intended to be planted that may stand

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* Different crops require different degrees of tillage; the turnip and clover husbandry excels in this particular, that wheat, the winter crop, is sown at one ploughing, and the summer crops at several.

more than one year, otherwise you will have more trouble and expence than you can well imagine.

Fourthly. To trench and drain all wet springy lands; for standing water kills all sweet grass and herbage, and produces nothing but rank weeds, rots the sod, and in time makes a quagmire: The methods to do this are known.

Fifthly. To keep the bounds and fences in good repair; for it is to little purpose to crop your land, and leave it in a condition to be preyed upon by every invader. These maxims should be universally observed, for without a due observance of them, all other endeavours will prove ineffectual.

Few Farmers have any notion of improvement without manures of some kind or other; but in many places they are scarce, and hardly to be obtained in large quantities at any rate. Some lands are so situated and circumstanced that the expence of manuring (if manures could be got) would far exceed all advantages; but I maintain it that such lands by a judicious management may be improved, independent of any manure but what may be raised from the land itself: There is indeed some land so barren as to be incapable of any improvement; but all lands that will bear furze, fern, broom, thistles, or weeds of any kind, may be cultivated to useful purposes, without the expence of any other manure than what grows upon it.

I by no means mean to decry the use of manure; I too well know its value, and that it may be diversified almost without end. I also know, that that Farmer must be very indolent, who, having plenty of it within reach on moderate terms, neglects it; but it is not always to be purchased in the quantities desired; therefore if land is not to be improved without manure, improvements can never become general.

It may be said, that attempts of this kind have been formerly made without success, and that much land which has been in tillage heretofore now remains neglected in the condition above represented. This is certainly true, and what I have frequently seen, but proves nothing against this plan of improvement, though it is a forcible impeachment of the avarice, indolence, or ignorance of the occupier: if men will sacrifice all future advantage to a little increased present gain, the fault is in themselves, and not in the lands they possess.

I am, sir, wishing success to your laudable work,

St. Albans,

Your very humble servant,

Dec. 2, 1777.

A HERTFORDSHIRE LANDHOLDER.

ARTICLE

ART. VI. To make a strong Plaster or Cement,

For the FARMER'S MAGAZINE.

Mr. EUSTON,

As several methods for coating, and covering the external parts of buildings, and other useful purposes, have from inattention, and neglect, and from the charge of the materials, not been usefully applied, the following prescriptions are therefore recommended for the use and experience of all persons concerned in the building branch.

To make an exceeding strong cement, or plaster, which will endure the weather not inferior to stone:

Take lime and sand, and temper it with linseed oil, to the consistency of mortar, spread it on the wall to a competent thickness, and it will become as hard as a stone, and will last many ages; and if dials are to be formed against stone, or hard bodies, he advises to drench them well with white lead and linseed oil till they will drink no more.

Chambers's Dictionary, vol. 3. under the term cement. Mr. Boyle (works abridged, vol. 1. page 111 and 128) gives a cement equal, if not superior to the above-mentioned, to close and mend pipes of a subterranean aqueduct.

Tobacco pipe clay pulverized, and mixed with a large quantity of pulverized flints, and carefully beat up with linseed oil.

In the year 1737, Sept. 3d, a patent was obtained by Alexander Emmerton, for the several purposes therein mentioned, wherein he declares the nature and use of his preparation as follows:

First, prepare the timber planks and boards with boiling oil, which is prepared to a glutinous consistency for that purpose, then by a covering several times of compounded poisons, viz. powdered glass, stone-dust, and sand cemented with the strongest compound of several sorts of painting colours, and oils; and for buildings, the poisons are for the most part left out, and the sand, and other things varied according to the different parts of buildings wherein this method is used, some being to have an exact resemblance of stone, and on the other parts, to serve instead of lead, and tiling.

In the Gentleman's Magazine 1759, page 576, is a description for making mortar with dry sharp sand, fresh lime of cockle-shells, some tow, or hair, well beat up with water and oil.

There are many other descriptions for making mortar, or a strong cement, in the Philosophical Transactions, and Magazines.

gazines. Likewise, a pamphlet was published by T. Cadell, 1775, containing Mons. Lorient's description of making a strong cement, or mortar.

It may be observed, in all the foregoing prescriptions, that linseed oil, whether simple, boiled, or otherwise, appears to be the basis, retentive, or perdurable quality of the materials used.

Your's, &c.

ARCHITECTOR.

ART. VII. *Letter from a Hertfordshire Gentleman Farmer, recommending his Method of Brewing Brown Beer.*

S I R,

I Am one of those singular men who love to keep up some remains of old English hospitality in my house; none of your French slip-slops for me; good old nut-brown is the thing I love, therefore I am never without a few hogheads of good brown strong beer in my cellar, for the benefit, not of my own family alone, but of such visitors as are worthy of it; and as I take you to be a good honest fellow for a bookman, Mr. Editor, you shall have a fresh cask tapped whenever you will please to pay me a visit. You have only to ask for the farmer who keeps the best beer in the parish, and there is not a soul in it (the Rector excepted) but will direct you to my house.

You must know, (or if you do not, I will tell you) that I have for many years been particularly curious in the brewing this beer, insomuch that if I am well, I am generally copperman myself, and attend to the boiling part.

I have taken a fancy to communicate my method to the public: As your Magazine is read all about here, I thought I could not hit upon a better method than sending you a letter to put into your next number; so here's my service to you, and success to your work, for 'faith I like it.

I am always careful to get soft water, and on this account take it from a pond at the back of my house. I brew in March, because I think that season best; after my water is boiled, I put it into large tubs, and let it stand exposed to the air a week to cool and purge itself.

Having procured the best brown high-dried malt, (we are famous for malt, you know, in this county) I grind it three or four days before it is used, that it may have time to mellow and dispose itself for fermentation.

When

When a copper of water boils, about three quarters of a hoghead is laded into the mash-tub, and the copper immediately filled again, and made to boil. When the water in the mash is come to such a state that you may see your face in it, I empty nine bushels of malt by degrees into it. This is well mashed and stirred about for half an hour, till the malt is thoroughly wetted and mixed with the water. Another bushel of malt is then lightly spread over the surface, and the whole being covered with the empty sacks to keep in the steam, it is left undisturbed for an hour. At the hour's end the water in the copper being boiling, the fire is damped, and the water is left till I can see my face in it, (which being somewhat ruddy is soon done) after that as much is laded on the mash as will make the whole when run off yield one hoghead of wort. When this second quantity of water is laded on the mash, it is again well stirred, and being again covered is left quiet for another hour.

The first wort is then let out in a small stream into the under-back, and another hoghead of hot water is laded on the mash; after this it is again well stirred, covered, and left for two hours. In the mean time the first wort is returned into the copper, and six pounds of fine brown seedy hops are put into it after first rubbing them between the hands; a brisk fire is then made till the liquor boils, and continued till the hops sink; the fire is then damped, and the liquor strained into the coolers. When it is come to be only as warm as milk from the cow, some barm is mixed with it, and it is left to work till the top appears in curls. It is then all stirred down and well mixed with a hand-bowl, and again left to work; this stirring with the bowl is repeated three times. It is then tunned and left to work in the hoghead; when it has nearly done working, the cask is filled up and bunged, but the vent-hole left open. When thus managed, the beer I am writing about will keep for years, but will be good drink the following harvest.

At to the second wort, it is set by for the next brewing, to be used in the following manner:

For my second brewing, so far as wetting my mash, I proceed in the same manner as at first; but afterwards, instead of water, I heat the second wort of my first brewing and lade it on the mash. The new wort by this means gets more strength and softness. The second wort of this second brewing I make with water, and save it to form the first wort of my third brewing, and so on as many brewings as I choose, for I brew my whole year's beer in this month.

I must

I must observe that I take off a third wort from my first brewing, which I heat and lade on the mash of my second brewing, after taking off the second wort; and by this means out of two brewings, I get, besides, a hoghead of very good mild beer. Every body likes my beer, it is as fine as rock water, purely strong, and makes all my friends merry.

I am, sir, your humble servant,

A LOVER of GOOD BEER.

[We are much obliged to our facetious correspondent for this letter, and promise him, that when we come into Hertfordshire, we will regale ourselves with a tankard of his October.]

ART. II. *On the Culture of Turnips.*

S I R,

PERHAPS there never was a greater improvement in Agriculture than the practice of sowing turnips as food for cattle; the counties of Norfolk, Suffolk, and Essex, are the places where this husbandry is practised in the greatest perfection.

In the last mentioned county I live, and hold no inconsiderable quantity of land. I have for many years found the raising turnips so great an improvement, that I wish the right knowledge of this culture was propagated more than it is throughout the kingdom.

I shall give, you for the public benefit, a few maxims, which may perhaps be of some service, as I know them to be both useful and profitable.

Land cannot be brought into too good tilth for sowing turnips; they require a deep, loose, well-wrought mould*; and to effect this, good ploughing and harrowing is the best way. One ploughing properly timed is worth three out of time.

A light land requires less ploughing, as well as less nicety in the time of ploughing, than a stiff heavy soil; and it is also sooner brought into good tilth. Two well-timed ploughings will generally do for the former, whereas a clayey soil will require three or four, before it is brought into order.

An early ploughing will greatly forward the getting a stiff soil into order. The month of April should be the latest that such

* If we remember right, Mr. Miller observes, that the soil most proper for turnips is a light sandy, loamy earth, not rich, for in a rich soil they grow rank and are sticky; but if the soil is moist, they will thrive better in summer, especially in fresh land, where they are always sweeter than upon an old worn-out, or a rich soil.

such land, when intended for turnips, should be turned up. It may then lie till the beginning of June, when it should be harrowed down with loaded harrows to break the clods, and then immediately cross-ploughed; about a fortnight after this, it should be ploughed for the last time,* and immediately cross-harrowed, and sowed before the surface dries, with the turnip-seed pretty thick, then scratch it over with a light harrow, to cover the seed. I look upon it that turnip-seed ought to be sown thick, for it seldom all comes up, and of what rises much is often destroyed by the fly and slug, so that the plants sometimes, though the seed was sown thick, require but little thinning with the hoe.

The beginning of July is the time in which I generally sow my turnip-seed: The grand affair is so to hit the time that the turnips do not grow sticky or spongy before winter, and yet are forward enough in their growth to resist the frosts, and be fit food for cattle in winter and the spring.

To have a good and profitable crop of turnips, it is absolutely necessary that they should be hoed, not only to kill the weeds, but also to thin the plants, and set them out at a proper distance.

The proper time for the first hoeing is when they have put forth their fourth leaf, and the second hoeing about three weeks after; twice is, in general, enough, unless a very rainy season should follow, and then it will be proper to take the advantage of sunshine, to give them a third hoeing. This is often neglected, but it makes the turnips thrive exceedingly by stirring the ground about their roots.

At the last hoeing, the plants should never be left nearer than one foot asunder; sixteen inches is still better, and some of the best Norfolk Farmers leave them eighteen inches wide.

If the soil on which the turnips grow, is light and dry, the best way is to feed your sheep or cattle on them on the spot where they grow, because the very treading of the cattle fixes and mends the soil. If it is heavy and stiff, by all means draw them, and carry them off in tumbrils, into some dry pasture, or on a dry field you want to mend; for were you to feed them on the land, one half at least would be rolled in the dirt trodden under foot, and spoiled. Land cannot be too rich for bearing turnips; if well dunged it will bring them forward, and make them escape the fly better, for when once the leaves

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* We presume that in the general practice of turnip husbandry, the ploughing here recommended will not be sufficient for the purpose of cleaning the land, &c.

become rough, the fly does not choose to touch them; it is therefore certainly best to encourage their growth, and bring them as soon as possible out of danger.

When my young crop of turnips are come up, and I have been fearful of the fly, I have frequently sown them over with foot, or wood ashes. These have been of great service, especially if gentle rains followed, as neither the flies nor slugs choose afterwards to touch them. But I must observe, that in dry, hot weather, this is not a safe practice, for the ashes being of a hot nature will be apt to burn up the crop. As to slugs, the best way of destroying them in dry weather, is with a light roller; this crushes and kills them, and does the crop service, especially if it is light land; for it presses the particles of the land closer, so that the moisture of the earth is not so soon exhale by the heat of the sun.

It is scarcely necessary to observe, that dry weather is the best for hoeing turnips in, as then neither the weeds nor the turnips that are cut up, will be so apt to grow again.

In light gravelly, or sandy soils, the seeds of turnips may be deeper covered than in stiff clayey land. In the former, it may be pretty well harrowed in; in the latter, the ground should only be slightly scratched with a very light, short-toothed harrow, or even only bush harrowed; for by that means they will sooner appear above ground, be sooner out of danger, and thrive better afterwards; the apple of the root growing almost intirely out of the ground, the whole nourishment is drawn by the tap-root, and the horizontal roots, which shoot from it on all sides. The quantity of seed to be sown on an acre should be from two to three pounds,* according to its goodness. Many Farmers use equal quantities of new and old seed, thinking this method best, for the new seed comes up first, and if the fly takes it, the old seed in a day or two succeeds, and generally fares better.

If a crop of turnips fails either through any defect in the seed, or by the ravages of the fly or slug, it is usual to sow the same land over again; for this reason it is best to sow early, as by that means there will be time, if the first crop fails, to sow another.

Turnip-seed is very apt to take damage from wet, if it is not covered as soon as sown; without this precaution, it will sprout prematurely, malt or mould. By too easy a germination the seed is too apt to burst. I have

* Even on our correspondent's principle of sowing thick, two pounds of good seed will be sufficient for an acre. A fourth part of that quantity would do, were it not for the many dangers to which that crop is exposed.

I have given you these hints, in consequence of your request to be furnished with experimental information; you could not possibly have adopted a more proper method of obtaining valuable materials for your very useful work, to which I wish all possible success;

And am, your very humble servant,
November 3, 1777. *AN ESSEX LANDHOLDER.*

[It has been hinted to us, that when turnips are sown very thin, they are not so liable to be eaten by the fly, as when sown very thick; we should be glad if some of our correspondents could authenticate the fact.]

ART. IX. On the Management of Horses, employed in Husbandry, in a Letter to the Editor.

AS this animal is one of the most useful we have, we cannot be too attentive to his health, or endeavour too much to render their necessary servitude as easy and comfortable as possible.

Most of the disorders to which horses are incident, proceed from improper feeding, or too much restraint. What can be more disagreeable to them, than, after working them nine or ten hours, to tie them up with a halter in a stall not more than four feet wide, and seven or eight feet long, there to remain for the rest of the day and night? They naturally love liberty, and if they had a reasonable share of it, they would much sooner recover their fatigue, and enjoy a far better state of health.

This I know to be a fact from my own experience; for I never keep my horses confined in a stable, winter or summer, and find great benefit from this practice; for my horses seldom ail any thing, are free from coughs, and colds, and last me more years than my neighbours.

I have two fields of ten acres each, near my house, and have a stable built so as to afford a ready entrance into each field. In these closes I let my horses range alternately, in each a year at a time; and I have always one of the fields either in wheat or barley, with both which crops I sow a small quantity of clover; and in this manner they pay me very well.

I do not depend much on the pickings my horses get of the clover, though it is of some service to them, for they are always regularly fed, winter and summer, in the stable. Their general feed is, in summer, green fodder mowed fresh and fresh, and laid for them in the rack; and this consists of either clo-

ver, faintfoin, or good meadow grafs: They have alfo a proper allowance of corn, which is always proportioned to the work they do, and the condition they are in. I do not confine them to oats alone, but allow a variety of beans, peafe, tares, oats, barley, and fometimes rye. I find, by this management, they eat their meals heartier, with a better appetite, and their health is better preferved.

In winter I allow them a moderate quantity of good fweet hay; but the greateft part of the corn they eat during this feafon is given them unthrefhed. This is an excellent method, it faves hay, as they neceffarily eat a great deal of the ftraw or haulm with the grain: Their appetites are hereby kept up, and they do their work with more chearfulnefs. Befides, this method of feeding them prevents your plough-man from giving them more corn than they ought to have, and from ftarving three or four horfes; to make one uncommonly fat and fine, which he takes a particular liking to.

The ftalls in my ftable are constantly kept well littered, that the horfes may lie down either by night or day at their eafe; and they generally prefer lying in thefe ftalls to fleeping in the open air in fummer, becaufe the flies are lefs troublefome there; and in winter, becaufe they find it warmer. By the practice of this method with my horfes, none of them are ever troubled with greafy heels, which chiefly proceed from their ftanding too long in the fame pofture, without exercife. In the common way of managing horfes, they are always either hard at work, or ftanding ftill. This muft of courfe be unwholefome, and a mean is neceffary between the two extremes. Moderate exercife is always wholefome to animals; and if you give a horfe the liberty of ranging at will over a few acres of land, nature will prompt him to ufe as much motion as is neceffary for his health.

Some perfons have afferted that the haulm of peafe and tares is unwholefome food for horfes; but I never found them fo. Too large quantities, however, fhould not be given to horfes confined in a ftable; but let them have the ufe of their limbs, and this fodder will do them no injury.

I imagine, I fhall in fuch a work as yours, thefe hints may be introduced with propriety, and I have related only my own experience.

I am, wifhing fuccefs to your Magazine,

Essex, Your moft humble fervant,

Oct. 16, 1777. A FARMER.

ARTICLE X. Directions for effectually clearing Gravel Walks of Moss.

GRAVEL walks are great ornaments to gardens, and the pleasure-grounds of gentlemen: but, in shady situations especially, they are very liable to get mossy. Turning them over in the spring will, for a short time, remedy this evil: but where the walks are wide and long, this method is very expensive. Salt is also a remedy, but liable to the same objection, the duty making it come too high. The following method is therefore recommended:

In most large families there is a great deal of meat salted: instead of throwing this out, let your servants pour it into a cask or barrel. When a sufficient quantity is collected, add two parts of pond water to one of brine, and drench the walks well with it through a watering-pot. This will effectually kill the moss; but the liquor being impregnated with salt, it will form a crust (when heated with the sun) on the surface. This is, however, remedied by watering it with fresh water in which no brine is put.

Another advantage arising from this method, is, that it drives away the worms: It also prevents weeds from springing. Every autumn let the walks be well sprinkled with this liquor for at least a week, to prevent worms and moss in the winter; and by repeating it two or three times in the summer, the weeds will be effectually destroyed.

ARTICLE XI.

For the FARMER'S MAGAZINE.

Mr. SYLVAN,

AGRICULTURE is brought to greater perfection in England, than in any other country in Europe; nevertheless, we are certainly far short of that point of perfection to which we might arrive.

A great part of this kingdom is still uncultivated: Mountainous and fenny tracts, downs, heaths, moors, &c. form an immense quantity of land, most of which is capable of culture. Even in the finest parts of the kingdom, agriculture is not so perfectly known and practised, as to render a continued attention to further improvements needless or unprofitable. If an exact register had been kept for a century past, of any tract of land or farms, setting forth the produce of every kind, we should

should find it in an uniform progression of increase. The best authorities which curious men have been able to consult, discover a great increase in our growth of corn, which is an evident demonstration of an improving husbandry; and the experience of many thousand intelligent men will shew us, that we are yet very far short of that perfection which, by a continued labour, we may possibly reach.

Nothing can contribute more towards spreading a general knowledge in agriculture, and to make known to every part of the kingdom the methods followed by all the rest, than a general receptacle of farming intelligence, published frequently.

To answer this purpose, the plan of your useful Magazine is well adapted; and as a valuable improvement, permit me to recommend your establishing a regular correspondence with the Agricultural Societies in different parts of this kingdom. By this means you might double the size and price of your work, and render it one of the most valuable publications extant.

From those sources of instruction, you might collect a variety of materials very interesting to every Farmer. This would certainly engage their attention in proportion as it became known, although that useful class of men are not so ready to seek for information in books, or to depart from their ancient mode of practice, as one might reasonably expect in so enlightened an age and nation.

Warwickshire,
Oct. 28th, 1777.

I am, sir, your constant reader,
A LAND-OWNER.

[We have already applied to the Agriculture Society lately established in the city of Bath, for the western counties; who have very obligingly complied with our request, and promised to communicate every article of information which they think is worthy of public notice: And as this Society have opened a regular and constant correspondence with those in London, Norwich, York, Manchester, and Brecon, all the intelligence conveyed from those places will center with the Bath Society, and be communicated to us for the enriching our work with the most valuable and interesting matter that can possibly engage the attention of Farmers and Land-owners in general. With respect to advancing the price of our Miscellany, we wish not to lay any unnecessary tax on the public. If we are but paid for our labour, it is all we wish for; and therefore shall, till the increase of materials render an alteration necessary, continue to publish the Farmer's Magazine at the usual price.]

ART.

ART. XII. On the Importance of Industry among the Poor.**To the EDITOR of the FARMER'S MAGAZINE.****SIR,**

I Have constantly purchased and with pleasure perused your useful work from its commencement, and if you continue to furnish us with a succession of as good materials as you have given already, I may safely venture (without the spirit of prophecy) to foretel that your excellent publication will soon be out of print. If you are not furnished with more interesting materials, you will oblige me by inserting the following observations in your next number.

It is agreed by the most sensible politicians, that the true riches of a state consists in the proper and constant employment of the labouring poor; and all countries will flourish in proportion to the quantity and value of their labour. This nation depends principally on the culture of the earth, which is chiefly effected by this class of the people. Consequently a loss of labour is a loss to the state. A waste acre of land is a public nuisance, and in like manner the loss of a single hour's work of a labouring hand, however small, is a public loss. Hence, to prevent such loss, it is necessary to enable such hands always to find employment. Little things are too often disregarded. The old proverb, that "a pin a day amounts to a groat a year," is equally true and instructive. A practical attention to it is equally necessary to states as to individuals. What wretched policy therefore it must be, by any improper laws, to give the least encouragement to idleness, which is constantly attended with such loss to the public.

That the poor ought to be well fed, well cloathed, and live in a warm comfortable manner, is a point of undoubted consequence; but the enabling them to live in this manner, at the expence of the public good, in the loss of a considerable part of their labour, is a grievance which merits attention and redress.

Our parish laws, as they at present stand, encourage idleness. While they afford relief to those who cannot subsist by their own labour, they tend to decrease that labour which numbers are capable of performing, by securing them a maintenance without it.

Compare the present state of our poor in respect of industry and sobriety, with an ideal state of them, if this total dependance on the parish was at an end.

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On this side the way lives a little Farmer, who works excessively hard, is very sober, does not spend a shilling unnecessarily in the year, and yet can hardly live. On that side see a poor family; they will eat much better than the Farmer, have their tea twice a day, will not work harder than part of their present maintenance requires; for, behold! the parish pays their rent, and finds them fuel: If the slightest accident or sickness happens, they immediately become chargeable; and when old, and past hard work, wholly so; whereas the money they have spent in the single articles of tea and sugar, if saved, would entirely have prevented such charge; or constant labour while in health, doubled to themselves the amount of it. Is it by any means just, that the poor Farmer's industry should be taxed to support their idleness. But what I have said in relation to these country labourers is still more striking among poor manufacturers. When they work tolerably they earn much more than the pay of the labourer. I have frequently heard labourers, in the full perfection of their strength, talk of the parish maintaining them on any little accident or illness; men whom I have known to earn three-pence or four-pence a day more than the common pay of the country, which others while in health are obliged to subsist on.

I have also observed that numerous families when completely clothed by the parish, will let their cloaths drop in pieces, without being at the trouble of mending them, at the very time when they have every day drank their tea sweetened with nine-penny sugar. Numberless instances of this kind have occurred to every attentive observer; and it is certainly owing to the certainty of obtaining a parish maintenance when they are in want, or arrive at old age.

I therefore cannot help being of the opinion, that the present laws relative to the support of the poor, tend greatly to encourage idleness, drunkenness, and tea-drinking among them; and that on this account, they are highly prejudicial to the welfare of this kingdom.

By this indiscriminate provision for the poor, they consider themselves, in a manner, legally entitled to live without industry. One of the strongest objections against a standing army in time of peace, is the great expence to the nation of maintaining sixteen or twenty thousand idle men, who ought to support themselves by their own labour; yet we give no attention to the superior burthen of another army, consisting of no less than 600,000 persons; for such was the number of those receiving alms about sixty years ago, and we have no reason

for to think their number is lessened since that time. Supposing one half of these to be really infirm, and justly intitled to public charity; is it not a disgrace to our national policy to let the other half prey upon the state, when, by judicious and proper regulations, they might be made to contribute to the support of it.

Shepton-Mallet,
Nov. 6, 1777.

I am, sir, your most humble servant,

AN ENEMY TO IDLENESS.

ART. XIII. *On the Use of Woollen Rags reduced into Flocks, as a Manure.*

S I R,

I Take in your Magazine, — the design I highly approve, and I doubt not but you will meet with the encouragement so useful a work deserves.

Herewith you have a hint, which if thought of any service to the public, I am certain you will admit it.

Woollen rags are well known to be excellent lasting manure. The common method (I think) is to make a dunghill of them; but I am persuaded from experience, that reducing them into flocks in a paper engine, which may be worked with a horse, renders the articles much cheaper, as a smaller quantity, when reduced to flocks, will be sufficient for an acre, being then as it were loam; consequently it goes further, the manuring is more regular, and will answer I am certain, exceedingly well.

I flatter myself that I shall often be entertained with instructive essays in the course of your work,

And am, your humble servant,

A. WILTSHIRE FARMER,

[Every animal substance is good manure, and (as our correspondent observes) woollen rags are particularly so; as not only being part of the animal, but are supposed to be strongly impregnated with animal emuvia by being used, perhaps, several years before in cloathing.]

ART. XIV. *On the Cultivation of Carrots and Parsnips as Winter Food for Cattle.*

IN answer to your letter requesting information respecting the mode of cultivating carrots and parsnips, as a winter food for cattle in this county, I send you the following, which you may depend on, as I write from my own observation.

VOL. II.

C c c

Carrots

Carrots and parsnips have been cultivated some years with great success in this neighbourhood. Most of the Farmers here regularly sow a small field of carrots for the winter food of horses, and sometimes send them by the sea to the London market. The soil is an exceeding light sandy loam; I think it may be called almost an absolute sand; so deep and loose, that I easily with a shovel, made a hole a yard deep in a carrot field without finding any change of soil. It was in the month of October, while the crop was taking up; many of the carrots were as large as the body of a pint bottle, very strait, and of great length. Nine hundred bushels are frequently raised from one acre, and they are here reckoned a very good fallow for barley.

The method of cultivating them is to plough a very fleet furrow with a pair of horses: Another plough follows this, which cuts to the depth of eighteen inches. By this loosening the earth very deep, the tap-roots of the carrots strike easily, and are much longer than they otherwise would be; they then harrow in the seed. All these operations are performed nearly about Lady-day, without any previous ploughing of the stubble; they are hoed three times, at the price of six, five, and four shillings an acre; we dig them up with a long spade, very quick and easily.

In such soil, where the work is common, the hoeing is (as I have said) performed for fifteen shillings per acre, but in some parts of the kingdom workmen will not do them under twenty shillings the first hoeing. I have myself cultivated them on a fine light turnip-land loam, trench-ploughed, and hoed the first time at thirty shillings per acre, and the men made only eighteen pence a day each, although I thought they would earn half a crown. Now this vast expence of hoeing, and the succeeding one of taking up, renders the culture of carrots very expensive on stiff land, and in countries where it is not a common practice. I therefore think they will not answer to Farmers in general, unless Premiums were offered to cultivate them. Turnips will thrive well on land which will not bear carrots, but wherever the soil will admit them, they are far more profitable.

What has been said of carrots is in a good measure applicable to parsnips. But I apprehend, that unless they will thrive on a soil too stiff for carrots, the culture will never answer; the latter is by far the most valuable vegetable for the winter food of cattle.

Near Woodbridge, I am, sir, your humble servant,
Suffolk, Oct. 30, 1777. JAMES ELLENSON.

ART.

ART. XV. On the Advantages that would arise from converting the Waste Lands in this Kingdom into Arable Farms.

Mr. SYLVAN,

IN a kingdom where Agriculture has received such great encouragement, as in England, that so many large tracts of waste land should yet remain, is at once matter of regret and astonishment. It is true, that within these last fifty years we have done much; but it is equally true, that much still remains to be done. In the constitution of our soils, nature has been liberal, and the best testimony of our gratitude would be that of making the best use of what she has put into our hands, and being diligent in making every improvement within our power.

Excepting the dreary moors in Derbyshire, where a coat of stone has covered the surface from the creation, and some barren mountains in Cornwall, and in the North, we have very little land but what is capable of bearing either wood, corn, or herbage. Many tracts of sandy and fen lands, which were formerly considered as unprofitable, have by the skill and industry made use of in modern times, been improved to many valuable purposes, and rendered scenes of fine and flourishing cultivation. The sandy regions on the north-west part of Norfolk, and the fens of Lincolnshire, Marshland, and the Isle of Ely, are now become worth at least ten times more than their former value. Draining, marling, and inclosing, have brought about this desirable change: But notwithstanding these self-evident advantages, we find, on a moderate computation, that nearly one seventh part of the kingdom still remains uncultivated wastes, and forests. England contains about thirty-four millions of acres; of this five millions are still uncultivated, although capable of being converted into arable farms, with little trouble, besides ploughing up the surface. In a country where there are such a number of uncultivated heaths and downs, it is absurdity to complain, in a public manner, of a want of plenty of provisions. Let but the Legislature take the proper methods to bring these five millions of waste acres into tillage, and such an increase would yield us another million of inhabitants.

Five millions of acres broken up, and converted into a regular course of husbandry, would be attended with the happiest effects to community. Nor would such a plan, if coolly considered, be found at all impracticable. It might be converted

into farms of five hundred acres each, properly fenced, and marled, at the sum of four pounds ten shillings per acre. Five millions of acres at that rate would cost 21,250,000*l.* or in other words be effected for one half of the money it cost this kingdom last war, to bury 20,000 of her stoutest fellows in the ditches of Germany. However, not to draw any such melancholy comparisons, where is the impracticability (our war with America once concluded) of raising one million a year for twenty years, to effect so glorious a work? What a variety of employments of the most valuable kind would ensue! It is employment alone which beneficially promotes population in a trading country. Think of the vast chain of exceedingly advantageous consequences which would result from such an undertaking. I cannot persuade myself to think that such a scheme can be neglected for ever; the eyes of our legislature must at length be opened, and the sooner the better. We look back with a kind of astonishment at the inconsideration of our forefathers: Future ages will do the same of us, if we fail in performing what is so obviously our own interest, as well as that of posterity. The only method I can think of (supposing the legislature not to undertake it) for the accomplishment of so desirable an end, is, for the societies professedly established for improvements in agriculture, and planting, to offer premiums sufficiently large to induce the gentleman to whom such waste lands belong, to inclose, improve, and divide them into farms. Were this the case, a noble spirit of emulation would be raised among land-owners, and by benefiting themselves, they would benefit community.

It were much to be wished, that societies of this kind were established in every county. Their institution is honourable, and their effects productive of general good.

We find that a society of this kind is on foot at the city of Bath, and heartily wish it success. We also much wish, that the members of that society may turn their attention particularly to the improvement and inclosing of waste lands, that the wide and almost unprofitable wastes of Marlborough, and Salisbury-down, and of Mendip hills, may assume the pleasing aspect of cultivation. Were this the case, in twenty years they might be rendered very valuable, and adorned with flourishing villages, and farm-houses. Materials are at hand both for improving the soil, and building houses. There wants nothing but public spiritedness enough to set on foot so advantageous an undertaking, to which the genius of the present age apparently invites us.

Agriculture

Agriculture is now become a fashionable employment. Many of our principal people cultivate it for amusement as well as profit. Surely two motives so strong will soon perfect what tends so much to the general good of the state, while it gratifies the strongest of all human passions by affording them at once amusement and profit.

Devizes. I am, sir, your very humble servant,
Aug. 6, 1777. A LAND-OWNER.

[As a great deal might be said on the other side of the question, against inclosing, we should thank an ingenious correspondent for an answer to the above.]

ART. XVI. *Observations on the proper Food of Plants.*

[Concluded from Page 359.]

IN order to strengthen my argument in favour of oil being the principal food of plants, I must here beg leave to observe, that all vegetables whose seeds are of an oily nature, are found to be remarkable impoverishers of the soil, as hemp, rape, and flax; for which reason, the best manures for lands worn out by these crops, are such as have most oil in their composition, but then they should always be laid on with lime, chalk, marle, or soap-ashes, so as to render the oily particles miscible with water. The book of nature may be displayed, to shew that oily particles constitute the nourishment of plants in their embryo state; and, by a fair inference, we may suppose, that something of the same nature is continued to them as they advance in growth. The oily seeds, as hemp, rape, line, and turnip, consist of two lobes, which, when spread upon the surface, form the seminal leaves. In them the whole oil of the seed is contained. The moisture of the atmosphere penetrates the cuticle of the leaves, and mixing with the oil, constitutes an emulsion for the nourishment of the plant. The sweetness of this balmy fluid invites the fly, against which, no sufficient remedy has yet been discovered. The oleaginous liquor being consumed, the seminal leaves decay, having performed the office of a mother to her tender infant. To persons unacquainted with the strict analogy between plants and animals, this reflection will appear strange: Nothing however, is more demonstrable; the leguminous and farinaceous plants keep their placenta, or seminal leaves within the earth, in which situation they supply the tender germ with oily nutriment, until its roots are formed, and grown sufficiently strong to penetrate the soil.

It

It is usual to talk of the salts of the earth, but chemistry has not yet been able to discover any salts in land that has not been manured, though oil may be readily obtained from every soil; the very sandy ones excepted. Marle though a rich manure, has no salts; it is thought to contain a small portion of oleaginous matter, and an absorbent earth of a nature similar to limestone, with a large quantity of clay intermixed. Lime mixed with clay comes nearest to the nature of marle of any factitious body that we know of, and may be used as such, where it can be had without much expence. By increasing the quantity of clay, it will make an excellent compost for a light sandy soil; but to make the ground fertile, woollen rags, rotten dung, or any oily manure should be incorporated with it, some time before it is laid on. It is a received opinion, that lime enriches the land it is laid upon, by means of supplying a salt fit for the nourishment of plants; but by all the experiments that have been made upon lime, it is found to contain no kind of salt. Its operation should therefore be considered in a different light; by the fermentation that it induces, the earth is opened and divided, and by its absorbent and alkaline quality, it unites the oily and watery parts of the soil. It also seems to have the property of collecting the acid of the air, which it readily forms into a neutral salt, of great use in vegetation. From viewing lime in this light, it is probable, that it tends to rob the soil of its oily particles, and in time will render it barren, unless we take care to support it with rotten dung, or other manures of an oily nature.

As light sandy soils contain but a small portion of oleaginous particles, we should be extremely cautious not to over do them with lime, unless we can at the same time assist them liberally with rotten dung, woollen rags, shavings of horn, and other manures of an animal kind.

Its great excellence, however, upon a sandy soil, is by mechanically binding the loose particles, and thereby preventing the liquid parts of the manure from escaping out of the reach of the radical fibres of the plants. Upon clay the effect of lime is different; for by means of the gentle fermentation that it produces, the unsubdued soil is opened and divided: The manures laid on, readily come into contact with every part of it, and the fibres of the plants have full liberty to spread themselves. It is generally said, that lime answers better upon sand than clay: This observation will hold good as long as the Farmer continues to lime his clay lands in a scanty manner. Let him treble the quantity, and he will then be convinced

convinced that lime is better for clay than sand. It may be justly answered, that the profit will not admit of the expence. To this I agree; but then it is the application, and not the nature of the lime that should be called in question. Clay well limed, will fall in water, and ferment with acids; its very nature is changed. Under such agreeable circumstances, the air, rains, and dews, are freely admitted, and the soil is enabled to retain the nourishment that each of them brings. In consequence of a fermentation raised in the soil, the fixed air is set at liberty, which in a wonderful manner, promotes vegetation. It is the nature of lime to attract oils, and dissolve vegetable bodies.

Upon these principles we may account for the wonderful effects of lime in the improvement of black moorland. Moor earth consists of dissolved, and half dissolved vegetable substances; it is full of oil. Lime assimilates the one, and dissolves the other. Such lands, not originally worth four-pence an acre, may be made, by paring, burning, and liming, to produce plentiful crops of turnips, which may be followed with oats, barley, or grass seeds.

To the universal principle oil, we must add another of great efficacy, though very little understood; I mean the nitrous acid of the air. The air contains no such salt as perfect nitre, it is a factitious salt, made by the nitrous air falling upon a proper matrix.

The makers of nitre form that matrix of the rubbish of old houses, fat earth, and any fixed alkaline salt. The universal acid, as it is called, is attracted by these materials, and forms true nitre, which is rendered pure by chrysalization, and in that form it is brought to us. It is observed, that nitre is most plentifully formed in winter, when the wind is northerly: Hence we may understand the true reason why Farmers and nurserymen lay up their lands in high ridges during the winter months. The good effects of that operation are wholly attributed to the mechanical action of the frost upon the ground.

After saying so much in praise of nitre, it will be expected that I should produce some proofs of its efficacy when used as manure. I must confess that experiments do not afford any such proofs. Perhaps too large a quantity has been used, or rather, it could not be restored to the earth with its particles so minutely divided, as when it remained united with the soil by means of the chemistry of nature. I shall therefore consider this nitrous oil in the light of a vivifying principle, with whose operation we are not yet fully acquainted.

It

It has been already observed, that there is a strong analogy between plants and animals. Oil and water seem to make up the nourishment of both. Earth enters very little into the composition of either. Every soil in a state of nature has in itself a quantity of absorbent earth, sufficient to incorporate its inherent oil and water; but when we load it with fat manures, it becomes essentially necessary to bestow upon it something to assimilate the parts. Lime, soap-ashes, kelp, marle, and all the alkaline substances perform that office. In order to render that operation visible to the senses, dissolve one dram of Russia pot-ashes in four ounces of water, then add one spoonful of oil. Shake the mixture, and it will instantly become a uniform mass, of a whitish colour, adapted to all the purposes of vegetation.

This easy and familiar experiment, is a just representation of what happens after the operation of turf-burning. The sward being reduced to ashes, a fixed alkaline salt is produced. The moisture of the atmosphere soon reduces that salt to a fluid state, which mixing with the soil, brings about a union of the oily and watry parts in a manner demonstrated by the experiment. When the under stratum consists of a rich vegetable mould, the effects of turf-burning will be lasting. But when the soil happens to be thin and poor, the first crop frequently suffers before it arrives at maturity.

The Farmer therefore, who is at the expence of paring and burning a thin soil, should bestow upon it a portion of rotten dung, or shambles manure, before the ashes are spread, in order to supply the deficiency of oily particles. In consequence of this prudent management, the crop will be supported during its growth, and the land will be preserved in health and vigor.

Every one knows that animals, instead of being strengthened are enfeebled by a supply of improper nourishment. It is the same thing with regard to vegetables; but with this difference, that animals refuse whatever is improper, while vegetables, from their passive nature, must be content with what we give them.

The great Author of Nature, with equal eye, watches over the infancy of all his works. The animal enjoys the milky nature of its parent. The vegetable lives upon a similar fluid, though differently supplied.



Machine for cutting Chaff or Cane tops for Cattle

Made & Sold by James Sharp London

ART. XVII. *Reference to the Machine for cutting Chaff, &c.*

THE first Machine for cutting chaff by a single spiral knife, was made by the ingenious Mr. James Edgill, of Frome, in Somersetshire, and by him was presented to the Society of Arts in London; an engraving of which may be seen in Mr. William Bayley's descriptions of useful machines, page 80, plate XV. 11th May, 1768, when the Society came to the following resolution:

"The committee of mechanics took into consideration Mr. Edgill's machine for cutting chaff; Resolved, that the machine appears to be a very simple and useful construction, that the application of its spiral cutter seems to be new, and that it is the opinion of the committee, that the inventor is deserving of a bounty of Twenty Guineas, to which resolution the Society agreed."

The other knife, whereby it cuts twice in each round, was added by one of my own workmen; by which addition, and some other alterations, it is rendered a very expeditious machine.

This machine, when made upon a larger scale and sufficiently strong, has been found exceedingly useful in cutting the tops of sugar canes for cattle in the West-Indies, and has been much approved of in many of the West-India islands.

Directions for using the Double-Knife Chaff-Cutter.

Care must be taken that the knives are kept sharp by rubbing them on the front edge with a small whet-stone, and the steel at the end of the box will sufficiently whet the backside edge in turning.

The hay or straw must be laid long ways, as in common chaff-boxes, but not to exceed the thickness of about two inches under the weight.

When the straw is so placed, and the covering board laid upon it, the teeth of the claw must be passed through the slits of the covering-board, as far back as the forcing wheel, and notched bar will permit.

Work the engine till the claw is advanced up to the weight, and then feed it with more hay or straw, by lifting up the covering-board, and placing the fresh straw under what remains, removing back the claw to its former situation.

Care must be taken that nothing injurious to the knife be left amongst the straw, and that the forcing wheel and notched bar be frequently oiled.

To prevent injury, it should be kept locked, by reversing the handle upon the spindle, a hole being left in the wooden front to receive the handle, and also a hole in the spindle to receive a padlock.

JAMES SHARP.

ART. XVIII. *A Receipt to cure the Dropsy.*

[From the DAILY GAZETTEER.]

IN 1776, a gentleman, who frequents Brighthelmston in the season, was at an inn there, and according to custom went to see his horse fed. The hostler was then very ill, and very much swelled with a dropsy; my friend enquiring his case minutely, was interrupted by a lady Jewels enquiring for her carriage, who seeing the poor man's distressed figure, rejoined, from circumstances mentioned, that her husband would cure him for a trifle, if he would go with her into the parlour where they dined. Pleased with the news, he attended, and was ordered to go immediately and procure two pennyworth of frankincense, to spread it on leather like a plaister, and apply it to the pit of his stomach. The hostler, elated with hope, went for his remedy, prepared it according to direction, and in a day or two the cure was perfected, with one plaister only. My friend has seen this season, and finds the man as hearty and as well as ever he was in his life, without any signs of relapse.

A cure so cheap, so easy, and so soon procured, merits the attention of every one, as we often see so many of our fellow-creatures suffering under that painful disorder.

I might add, that the remedy has been tried since on an old soldier, who loved beer too well to be cured by cupping, has had the dropsy seven years, but is now perfectly cured by the above recipe.

CLERICUS.

For the FARMER'S MAGAZINE.

ART. XIX. *On the Importance of Societies for encouraging Improvements in Agriculture, Arts, Manufactures, &c.*

TO improve the natural advantages of a country, and supply by art and industry what nature has denied to sloth and ignorance;—to cherish the spontaneous productions of the soil, introduce those to which it is most favourable, and cultivate whatever conduces to health and national prosperity;—

to

to promote the extension of such manufactures as will most profitably employ the inhabitants, supply their wants, and form a staple and advantageous commerce with other nations;—are essential branches of that well regulated and excellent polity, which reflects the highest honour on a state, and best secures the permanent felicity of its inhabitants.

A constant uniform endeavour to promote these salutary purposes, by giving all possible encouragement to every new improvement and useful discovery, constitutes that public spirit, or true Patriotism, which, when exerted in its full force, raises to the highest point of human perfection, the happiness and glory of a nation.

To attain this point of perfection, the transient labours of a few individuals, extended only through the course of a few years, are very inadequate: The accomplishment of an end so important must, in the nature of things, be the work of numbers, and of many successive ages.

To trace the progression of arts and sciences, and the beautiful gradation of civilization, which has taken place since the period when men lived on roots and acorns, is, to a philosophic mind, a very pleasing contemplation; and tends to make us estimate with proper value those arts from which far the greater part of our present happiness is derived.

The wise Egyptians, the Chaldeans, the Phoenicians, the Greeks, and the ancient Romans, are handed down with honour through a long succession of ages, as the first great propagators of agriculture. They considered it, as it really is, the substantial basis and support of those arts, in which, at that time, they excelled all other nations; and even as the source of that commerce, by which they enriched themselves, and peopled the remote parts of the globe. By the introduction of agriculture and commerce, the most savage nations lost, by degrees, their ancient ferocity, became humanized, and more refined in their manners; societies were formed, and the arts and sciences furnished what the force of arms could never accomplish.—In this Island,

“This precious gem, set in a silver sea,”
which is blessed with so happy a temperature of climate, and enriched by the liberal hand of nature with a variety of soil, adapted to receive almost every species and degree of improvement which human wisdom can point out, the perfection of agriculture is far more easily attained, than in those sterile climes, where either the rigors of an almost perpetual winter, or the parching rays of a vertical sun, mock the efforts of

human toil, and render the most spirited exertions of industry fruitless and unavailing.

It would therefore be highly criminal in the inhabitants of this kingdom, to neglect its natural advantages, of soil and climate, or to relax in their endeavours to improve the gifts of nature, by exertions of art and industry, which experience shews are productive of the greatest national good.

That agriculture is not yet arrived at perfection among us is an undoubted truth. Much indeed has been done, especially within the last forty years, but a transient view of even the best cultivated parts of this island, will exhibit striking proof that much yet remains to do. When we reflect, that several millions of acres still remain uncultivated, and almost wholly unprofitable, the necessity of further improvements appears with a force almost irresistible to those, who wish for the increase of national happiness and glory.

The sagacious author of that excellent work, *The Political Survey of Great-Britain*, somewhere observes, that "Judicious industry is the true philosophical extension of man's dominion as a rational being." The idea is very sublime; and as Lord Bolingbroke has said on another occasion, "The thought is good, and the expression happy." In this respect, although the materials are laid before us, we are, in a certain sense, the **CREATORS** of those blessings we enjoy.

From a full conviction of these interesting truths, some men (who are, in the proper sense of the word, Patriots) have been animated to the most noble and spirited exertions, in promoting the prosperity and happiness of their country. The society in London, for the encouragement of Agriculture, Arts, Manufactures, and Commerce, has been for many years supported with a spirit that does honour to the age, and proved of infinite service to the nation.

The other societies of a similar kind, established in Norwich, York, Manchester, and Brecon, have also been generously encouraged, and have produced similar advantages within their respective limitations.

But I will venture to assert, that from the short time since its institution, there is not any of them that has been supported with such a noble spirit, or increased so rapidly, as the society for the encouragement of Agriculture, Manufactures, Commerce, and the Fine Arts, lately established in the city of Bath. As this society is formed on a larger scale, and extended to a far greater range of country than any other, except that of London, it certainly merits the attention of the public in a higher

higher degree than the rest. The improvement of four large and populous counties, in which improvement is much wanted, is the great object of its views, and if proper encouragement is given by those from whom it may be reasonably expected, much good will thence arise to the community.

Many of the nobility have already patronized this undertaking with a spirit that does them the highest honour, and I flatter myself, many more will catch the patriotic flame, and follow their example.

It is from gentlemen of fortune and education that we naturally expect the first support, in an undertaking, which, from its novelty in this part of the kingdom, cannot at first be fully comprehended by the lower classes of the people. The intelligent, and the rich, have a wider sphere of action; and when these set the example, others will quickly follow them.

But the encouragement given to this institution, has not been confined to the nobility; many other gentlemen, farmers, manufacturers, &c. have also given honourable proofs of their approbation of becoming liberal subscribers; and I wish not to injure the rest of my countrymen, by supposing that any of them who are of ability, and wish for the promotion of public happiness, will be backward in contributing the small assistance required of individuals, for carrying on this noble undertaking with success.

Every one who contributes to the support of a plan so well adapted to promote the good of the public, merits, and will receive the thanks of his country; be rewarded with public honour, which is due to public virtue; and, what is still more valuable, experience that secret self-approbation, which constitutes the highest mental enjoyment.

St. James's-Parade, Bath,

I am, &c.

Nov. 1, 1777.

EDMUND RACK.

THE HOUSEKEEPER'S DIRECTORY.

[Continued from Page 351.]

To preserve Green Apricots.

TAKE apricots before the stones are hard, wet them, and lay them on a coarse cloth, put to them three or four handfuls of salt, rub them till they are smooth, then throw them into scalding water; put them on the fire till they are ready to boil, take them off again, let them stand till they are almost cold; repeat this two or three times; then cover them close;

close; when they look green, boil them till they are tender, after which, take their weight of sugar, and to every pound of sugar put half a pint of water, to make a syrup, and let it stand till it is near cold; then put in the apricots, and boil them till they are clear; warm your syrup every day till it is pretty thick.

To preserve Cherries.

Pick the cherries, and take out the stones; put to every pound of cherries a quarter of a pint of the juice of white currants, (first passed through a jelly bag) and the weight of both liquor and cherries of double-refined sugar, and sprinkle it as you put them into the preserving pan, which you must boil and scum till the cherries look clear, then put them into glasses,

To preserve Currants.

Put a layer of currants, and a layer of sugar, in a flat-bottomed pan; boil them till the syrup is pretty thick, scum them as they boil; then take them off, and let them be cold before you put them into your glasses, which must be covered close.

To preserve Orange or Lemon Peel.

Cut your orange and lemons in half, take the meat out of them, and lay the peels three days in fair water, changing the water once a day; then boil them in three several waters, till they are tender; afterwards take a pound and a half of good sugar, powder it, clarify it, put a pound of peels into it, and boil them till your sugar is a full syrup, then cool and keep them for use.

To Candy Orange and Lemon Peel.

When you would candy them, take them out of the syrup, wash it clean from them in warm water, and dry them well with a clean cloth; after which make a new syrup of loaf sugar, and boil the syrup to a thicker consistence; then put in your peels, and boil till the syrup is stiff enough; then remove from the fire, and keep it skimming till the whole begins to cool; then take out your peels, and when thoroughly cold, they will be candied fit for use.

To preserve Fruit Green.

Take pippins, apricots, pears, plumbs, &c. while they are green, scald them in hot water and peel them, then put them into another water, not so hot as the first, let them boil till they are tender, take the weight of them in sugar, and put as much water as will make a syrup to cover them; boil them gently till the syrup is thick, and when cold put them, or put them into glasses.

[To be continued.]

POETICAL ESSAYS.

The CHARIOT and the PLOUGH.

HOW oft the empty prating fool
Hath felt the shaft of ridicule!
How oft his vain importance shewn,
Importance due to use alone!
Thus gaudy sops can make pretence,
To jest the Rustic's sober sense.

It happen'd on a certain day,
A Plough at rest stood by the way;
At which a Chariot stopp'd to gaze,
With much grimace and quaint
amaze;

At last, with an affected fwing—
Gad take me, here's an awkward
thing!

Why say, what plodding wretch art
thou?

Your betters—spoke the honest Plough.
Know, comcomb, I'm of real use,
What moves your wheels is my pro-
duce;

Pamper'd by me you roll in state,
And yet despise me, base ingrate!
While ev'ry honest, grateful soul
Remembers me when round the bowl:
The bumpers flow to wish me speed,
While things like you they never heed.

Put do you at my figure carp,
Why *Flimsy*, I was made by *SHARP*;
He studied with ingenious art
To form me and my brother Cart;
And now we play our parts so well,
Let those who most employ us tell.
While you, a rattling, noisy thing,
Roll to the brothel, park, or ring,
Some lavish gamester to attend,
I boast a *WILLIAMSON*† my friend;
Whose skill, on record you may find,
Directs me how to bless mankind.

SURRIENSIS.

*The Sparrow, Hawk, and
Butterfly.*

IN *Stop's* days, when birds cou'd
cast,
And judge the right of this and that;
And insects cou'd, as well as man,
The merits of each action scan.

A sparrow once, who sought a place
Of safety from the hawk in chase,
Fainting, a snug retreat espies,
To which, with force arriv'd, he lies;
And, while a fearful view he cast
On danger that was scarcely past,
In piteous, sad, lamenting strains,
Of his hard lot he thus complains:
Unhappy me! how sad the state;
In which I here am plac'd by fate!
Sure scenes of danger still attend,
Which way so'er my flight I bend;
But worst of all this monster he, e,
This cannibal, the most I fear.

'Tis strange that there shou'd live
'mong birds,

(But vain, alas! my plaintive words)

A wretch, whose sole delight's to kill,

And blood of innocence to spill:

For me, for ever I renounce

The cruelties that pleas'd me once;

For this retreat a vow I make,

(Which, may I die, whene'er I break)

No more to taste of insect's blood,

But grain shall be my only food.

Let savage hawks still thirst for gore;

But I'll desile my beak no more

His protestations having done,

And thinking now the hawk was gone,

He plum'd his wing, and peeping out,

To see no danger lurk'd about;

Prepar'd again to take his flight,

His bosom beaming with delight:

As thus he stood, a butterfly,

In life's gay pride, came flut'ring by;

The danger o'er, soo like mankind!

His virtuous thoughts he gave the
wind;

All former fears were fled away;

He issu'd forth, and seiz'd his prey:

The victim strait, with mournful cries,

In vain, to urge his mercy tries:

O spare! O spare, my innocence,

Who ne'er to you have giv'n offence!

The sparrow cries, with cruel taunt,

Put not on me your piteous cant;

Your being destin'd for my prey,

Gives me a cause of death each day;

Therefore, prepare to die, make haste,

For I no longer time will waste.

The butterfly, with fear, once more,

Did trembling, for his life implore;

O mercy

† Mr. Williamson, author of several ingenious letters in the *Farmer's Magazine*.

O mercy shew, or you may want
 That mercy now you will not grant.
 'Die,' cried the sparrow, spare your
 breath:

Then with a gripe, he seal'd his death,
 At th' instant, lo! the hawk return'd,
 Whose breast with inward fury burn'd;
 Who not far off the scene had stay'd,
 And the whole action well survey'd:
 Like lightning starting on his prey,
 He bore him instantly away.

For mercy quick the sparrow cries,
 Which justly thus the hawk denies:
 'How can'st thou, villain, hope to gain
 That mercy su'd of you in vain?
 'This instant die,' he cries no more,
 But strait the wretch in arms he tore.

Learn that great sinners to pursue,
 To do as you'd be done to you.

The SERENADE.

I.
 THE morning fair, all nature gay,
 Why, O why shou'd Chloë sleep?
 Why shou'd eyes that brighten day,
 Sadly solemn dirges keep?

II.
 Beneath a myrtle bank she lies,
 A rose sustains her head;
 Around her limbs soft daisies rise,
 And form the ambient bed.

III.
 Ye guardian Angels of the fair,
 Hither, ah! gently bend,
 Expand your silken wings in air,
 And this lov'd nymph defend.

IV.
 Lo! Damon steals from yonder bow'r,
 To break the maid's repose;
 See, see he grasps the treach'rous flow'r,
 He plucks the guilty rose.

V.
 So mild Bellone (as poets sing,)
 Was lull'd by Lethe's stream;
 When Argus came with Hydra's sting,
 And wak'd the penfive dame.

VI.
 Now Chloë rises from the ground,
 And Damon murmurs love;
 While gentlest odours whisper round,
 From Zephyr's balmy grove.

VII.
 So when Arachne, lovely maid,
 With Wisdom's Goddess strove,
 Soft colours blushing thro' the shade,
 Confess'd the hero's love.

VIII.
 Learn hence, ye fair, and trust not love,
 Nor flattering man believe;
 Since nature's self can treach'rous prove,
 O how must art deceive!

Oxon.

A. Z.

Average PRICES of CORN from Nov. 10, to Nov. 15, 1777.

Wheat Rye Barley Oats Beans						COUNTIES upon the COAST					
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	Essex	s.	d.	s.	d.	s.
London	5 0	3 1	2 6	1 11	3 6	Suffolk	4 11	3 10	2 4	1 10	3 0
COUNTIES INLAND.						Norfolk	4 8	2 6	2 1	9 3	4
Middlesex	5 11	2 9	2 0	3 4		Lincoln	4 8	3 4	2 1	8 3	5
Surry	5 10	4 0	2 8	2 2	0	York	5 0	3 5	2 4	1 10	3 10
Hertford	5 3	4 9	2 7	2 0	3 0	Durham	4 9	3 6	2 5	1 9	4 2
Bedford	4 11	3 2	6 1	10 3	1	Northumb.	5 0	3 3	2 3	1 9	3 4
Cambridge	4 8	2 9	5 1	8 2	10	Cumberland	5 5	3 2	6 1	9	
Huntingdon	4 7	2 4	1 7	3 1		Westmorel.	6 1	3 6	2 1	1 1	
Northampt.	5 7	2 10	2 10	3 3	3	Lancashire	5 8	2 9	2 1	3 7	
Rutland	5 1	2 7	1 1	3 0		Cheeshire	5 7	3 11	3 1	1 11	
Leicester	5 5	3 5	8 2	0 3	11	Monmouth	6 0	3 5	1 8	3 7	
Nottingham	4 9	3 4	6 2	0 3	0	Somerset	6 8	3 8	1 1	10 3	4
Derby	5 8	2 7	2 3	4 4		Devon	6 6	2 10	1 5		
Stafford	5 10	3 0	2 1	4 5		Cornwall	5 10	2 11	1 6		
Salop	5 4	3 8	2 11	1 10	3 2	Dorset	6 2	2 10	1 11	3 6	
Hereford						Hampshire	6 0	2 10	1 11	3 6	
Worcester	5 9	3 4	2 4	2 2		Suffex	5 5	2 10	1 11	3 6	
Warwick	6 3	3 0	2 6	4 4		Kent	5 7	2 10	1 11	3 6	
Gloucester	6 8	2 10	1 4	4 1		WALES.					
Wilts	6 2	3 1	2 4	2 2		No. Wales	5 5	4 3	2 8	1 11	3 1
Berks	6 1	4 2	7 2	3 3	11	So. Wales	5 3	4 3	2 8	1 11	3 2
Oxford	6 0	2 6	2 3	3 8		Part of SCOTLAND					
Bucks	5 4	2 6	2 0	3 7		Wheat Rye Barley Oats Beans Big.	4 2	1 10	1 8	1 10	



T H E
FARMER'S MAGAZINE.



*A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]*

American Husbandry.

MEXICO. **M**EXICO, or Old Mexico, is situated between the 83d and 116th degrees of west longitude, and between the 8th and 28th of north latitude, being about two thousand miles in length, and six hundred in the broadest part. It is bounded by New Mexico on the north, by the gulph of Mexico on the north-east, by Terra Firma on the south-east, and by the Pacific Ocean on the south-west; and is divided into three audiences, Galicia, or Guadalajara, Mexico Proper, and Guatimala.

Some time after the Spaniards had obtained knowledge of the West-India Islands, Velasquez, a governor of Cuba, formed a plan of reducing a part of the Continent to his obedience, and for this purpose fixed on Hernando Cortez, to command in the expedition, a man every way qualified for this or any other grand design; Cortez embarked at Cuba, and, from some misunderstanding with Velasquez, declared himself superior to his command, and, with his soldiers in the same opinion, sailed for Mexico, which was at that time governed by a Prince called Montezuma, a Prince of great capacity and personal courage, who had, by himself and generals, subdued several states and kingdoms round about, that were now tributary to him. His armies were disciplined and numerous, and in this situation did Cortez come with five hundred foot, and about sixty horse, to conquer this mighty empire; and to cut off all possibility of a retreat, he had burned his ships at

VOL. II. E e e landing,

landing, to convince his followers that he was determined to conquer or perish.

He was in a little time joined by the Zempballans, a nation subject to Montezuma; and the Tlascalans, a republic nation who at first opposed him, but soon assisted him with three thousand men. Montezuma endeavoured, by every means he could suppose, to persuade the Spaniards to return, but neglected to defend himself, till Cortez was advanced within the gates of Mexico.

Cortez continued for some time waiting for an opportunity to effect his purpose, when two Tlascalans arrived with an account that a Mexican General had fallen on some Indians who were friends to Cortez, and that some Spaniards, whom he left in a fort, which he built on landing and called Vera Cruz, in defending them were greatly endangered, many wounded, and one killed: Alarmed at this, he made Montezuma a prisoner, as an hostage for the Mexicans' behaviour, seizing him in his palace at noon-day. The people were amazed, confounded, and enraged to find their Prince, whom they revered as a god, a prisoner; and surrounded the Spanish quarters to punish the offence, and rescue their captive Prince.

This clamour was soon appeased by Montezuma, who declared that he was there by his own consent, and that he was treated with all the respect due to his dignity and honour; but the Prince could not be easy in his mind; finding himself degraded, with the consent of Cortez, he convened an assembly of the States, in which, in a premeditated speech, he set forth the origin of his nation, the prophecies, which foretold, that a race of people should arrive, and subdue the natives; that the people were now arrived, by whom this was to be brought about, and to whom the gods had designed, as they merited universal empire: He then declared himself tributary to the Emperor of the distant world, and exhorted them to a like obedience, and told them, that he was preparing presents worthy his acceptance, and hoped they also in proportion to their abilities would do the like, and testify their loyalty to their new master, and his general, and those brave men his companions, who might then be enabled to depart speedily to their own country with the utmost marks of affection and respect.

This threw the assembly into a consternation; Cortez was surprized and chagrined, but not confounded; he seconded the harangue, and the Mexicans, out of respect to their Prince, paid homage to Cortez, hoping for his speedy departure. The General, who had commanded in the engagement before-mentioned,

tioned, was given up as a victim, and the Emperor disavowing his knowledge of his conduct, he was burnt alive. It was impossible for two interests so different long to abide together without hostilities, and accordingly they began; the unhappy Prince was struck by a stone from an unknown hand, which hit him on the temples, as he was endeavouring to urge his own people to peace; he was carried in by the Spaniards, but wrapping himself up in his garment, he gave himself up a prey to vexation and grief, which with the anguish of the blow, put an end to his life in a few days.

Guatimozin was chosen successor, the nephew and son-in-law of Montezuma, who was no sooner called to his throne, than he took every measure which he foresaw to be proper to support his empire and destroy the enemy. He was a Prince fit to command, of a graceful person, a strong and robust make, and of a soul full of the most undaunted courage, and for a while fortune seemed to frown on the Spaniards; but Cortez being reinforced by more Spaniards, who came thither for other purposes, and strongly assisted by the Tlascalans, attacked the Mexicans on all sides with the utmost fury, and obtained a complete conquest, but not without rivers of bloodshed; Cortez lost a hundred of his Spaniards, and Indians innumerable; the loss of the Mexicans exceeded an hundred thousand men slain in battle, besides those who fell by disease and famine.

The climate of Mexico is very hot, but generally allayed by land and sea breezes, which make it not only tolerable, but agreeable; from the month of April to September, they have almost incessant rains, preceded by dreadful tempests. At this time all the eastern coast, which is flat and low, is consequently unhealthy, while the western, being higher, is more salutary and wholesome. The soil is various, but in general rich, fertile, and well adapted for agriculture and vegetation.

Innumerable quantities of horned cattle run wild in the woods of Mexico, and swine are equally plentiful as well as sheep; the most remarkable among the wild animals are, the peccary, the warree, the opossum, the armadillo, the racoon, the ounce, beaver, flying squirrel, and the sloth, not altogether unlike a common monkey, which it much resembles in shape, but is of a wretched appearance, the skin hanging loose all over its body, he never stirs unless excited by the calls of hunger, and is then a long time moving itself, all the while uttering the most lamentable cries and howls, which disgust the hearers, and excite horror and pity.

Among the birds are the macaw, the curasoe, the cardinal, and the humming-bird.

The vegetable productions are maize, barley, wheat, pease, beans, &c. all the fruits, roots, and plants, which are peculiar to America, or natives of Europe. Cotton is raised in great quantities in Mexico, and forms the chief part of their cloathing. Cocoa, which forms one of the principal parts of their commerce, is the produce of a tree of a middling size, bearing a pod in shape not very unlike a cucumber, which contains a number of nuts, the interstices between each, before they are ripe being filled up with a pulp of an agreeable acid taste. The shells when ripe are very tough, and contain some of the oily substance of which chocolate is made, but the principal part of it lies in the kernels. The May-key is found here, which furnishes the natives with thread for linen, &c. as also a liquor of a pleasant vinous taste.

Other productions of Mexico are gold, silver, pearls, precious-stones, cotton, sugar, vanilla, cochineal, gum copal, anime, taca-mahac, liquid amber, guaiacum, china-root, sarsaparilla, tobacco, ginger, indigo, &c. &c. Gold is discovered either in the sand of rivers, native and in small grains, or it is dug out of the earth, in the same condition, in small pieces, almost wholly metallic, and of tolerable purity; or it is found, like the ore of other metals, in an aggregate opaque mass, in a mixture of earth, stone, sulphur, and other metals; in this state it is of all colours, and makes very little shew of the riches it contains. But gold, however found, whether native, or in what is called the ore, is seldom or ever without a mixture of other metals, which are most commonly silver or copper. When the ore is dug out of the mine, the most usual method is to break it to pieces in a mill; the gold is then separated as much as possible from the impure mass by repeated washings, and mixed with a quantity of quicksilver, which has, of all other bodies, the greatest attraction to gold. This therefore immediately breaks the links whereby it was held to the former earth, and adheres closely to this congenial substance. It is then put into a trough, and a rapid stream of water suffered to run upon it, which scouring away, through a hole made on purpose, the lighter earth leaves the gold and mercury, precipitated by its weight, at the bottom. This amalgama, or paste, is put into a linen cloth, where it is squeezed so as to make part of the quicksilver separate and run out; but to complete this separation entirely, it is necessary to fuse the metal, and then all the mercury flies off in fumes.

But

But in many parts of Spanish America, the following method of getting and purifying gold is practised. When they are thoroughly convinced that gold lies in the bed of a rivulet, they turn the current into the inward angles, which time and the stream have formed; while this runs they dig and turn up the earth to make it the more easily dissolved and carried off. When the surface is thus completely washed away, and they are come to a sort of stiff earth, which is the receptacle of gold, they return the stream into its former channel, and dig up the earth as they find it, which they carry to a little basin somewhat in the form of a smith's bellows. Into this they turn a small but rapid stream to carry off the foreign matter, whilst they facilitate the operation by stirring the mass with an iron hook, which dissolves the earth; the stones are gathered up and carefully thrown out, that they may not interrupt the passages that carry off the earth. By this means the gold loosened from the gross matter, which adhered to it, falls to the bottom, but so intimately mixed with a black heavy sand, that none of the gold can be perceived, unless it happens to be a particular large grain. To separate it from this sand, it is put into a sort of wooden platter, having a little hollow of about the depth of half an inch at bottom. This platter they fill with water, and turning the mass about briskly with their hands for some time, the sand passes over the edges, and leaves the gold in small grains, pure, and of its genuine colour, in the hollow at the bottom. There are some other methods used for purifying this precious metal, but those described are the most common.

Silver, the second metal in rank, is the first in consequence to the Spaniards, as their mines yield a much greater quantity of the latter than of the former. It is found in the earth in different forms; sometimes twining itself, almost pure, round a white stone, and penetrating into the interstices of it, in the same manner that the roots of trees insinuate themselves into the rocks, and twist about them. Some are of an ash-coloured appearance; others spotted with red and blue; some of changeable colours, and many almost black, affecting somewhat of a pointed regular form like crystals; but it was never known to be found in grains, or in sand, native, as gold is. The manner of refining it does not differ essentially from the process which is employed for gold. They are both purified upon the same principle, that is, by clearing away as much of the earth as possible by water; by uniting or amalgamating it with mercury; and afterwards by clearing off the mercury itself, by straining

draining and evaporation. But the management of silver in this respect is much more difficult than that of gold, because this metal is much more intimately united with the foreign matters with which it is found in the mine, and its attraction with mercury is much weaker; great care is therefore taken in the amalgamation, and it is a long time before they are perfectly mixed. A quantity of sea-salt is always added, and no silver is had by mere washing. Old Mexico, with the other provinces of Spanish America, supply the whole world with silver, and it is said that the revenues of Mexico, proceeding from gold and silver only, amount to twenty-four millions of our money annually.

[To be continued.]

ART. II. *Mode of Farming for several Years, with course of Crops, Tillage, &c.*

IN the year 1770, I took a farm, and coming in at the expiration of a lease, I found every thing as customary out of repair; the barns, dwelling, and out-houses, belonging to my Landlord's own immediate care, gave me but little concern: but the land became my own immediate province. By the articles of the expired lease, the preceding Farmer had a right to carry off both hay and fodder, a thing uncommonly injurious, when suffered; but this matter was soon accommodated, and my Landlord bought all the hay and fodder, on condition that I spent the same on the premises the two last years of my lease of twenty-one years. The land had been so driven that it would scarce bear weeds, and I am well convinced the two last crops did not pay the expences; the farm consists of fifty-five acres, strong land, sixty-four of light land, and thirty-three acres of meadow; but perhaps I may as well ascertain the different fields in size and soil:

	Soil.	Acres.
1st Field, Black oats, 2d year; self sown,	strong,	8
2d, ditto, White oats after barley, one plough,	light,	10
3d ditto, Wheat after beans and pease mixt,	strong,	8
4th ditto, Oats after wheat, — — —	strong,	6
5th, Beans after wheat, — — —	strong,	10
6th, Oats, — — —	strong,	10
7th, Oats, — — —	strong,	8
8th, Summer and winter vetches, — — —	strong,	5
9th, Barley, — — —	light,	16
10th, Oats, — — —	light,	8
		11th,

			Soil.	Acres.
11th, Ditto,	—	—	light,	7
12th, Ditto,	—	—	light,	10
13th, Wheat,	—	—	light,	13
14th, Meadow,	—	—	—	7
15th, Meadow,	—	—	—	19
16th, Meadow,	—	—	—	4

Total number of acres,

149

The land had been very materially injured for want of manure, but a great deal more so for want of tillage; it having been the practice of my predecessor to sow every thing at one ploughing; and if the seed would have grown at all without, I presume, he would not have given that, as may be observed in the first field where the crop was from oats self sown. I had a great deal of up-hill work to do, and what was the melancholy part of the story, I had not an acre of turnips on my farm, so that I could neither keep any sheep or cows this year; I had no young grafs, either clover, black-grafs, ray-grafs, or saintfoin; in short, all expence before me, and a new kingdom to produce, but *audaces fortuna juvat*, [fortune favours the brave.] I set to with a good resolution, and began as fast as possible to plough up my stubbles; I was willing to do something, and I tilled, that is, ploughed No. 8, three times, and sowed it with wheat, so I did No. 5, not that I expected any great things from it, but merely in hopes of getting a little corn, and a little straw. No. 10, and 11, I ploughed also three times, and sowed with winter vetches, &c. but the course of crops I will set down in a scale, and tell you what I did that winter: I ploughed up No. 1, 2, 3, 4, 6, 9, 12, and 13, in as good a manner as if I had meant it for seed. I had it properly water-furrowed, &c. to keep it dry all the winter; as soon as we could finish this business, or on days too wet to go to plough, we went with two teams to a large neighbouring town for dung, and brought conveniently two loads a day with each team, without injuring the horses, and by this means we collected near three hundred loads of good dung, besides what was made about the premises, which we conveyed to every field ready for work in the spring or summer, where it would be wanted. The grand object of my attention was to get my land in order, and I thought this might be as well done at first as at last. I supposed turnips and vetches were as great strangers to the land as could be sown, I therefore, as meliorating crops, preferred them; turnips and winter vetches upon my light land, and summer vetches upon my strong land. By this means,

means, I obtained excellent summer food for my horses and kine. I sowed the French wheat with an intention to plough it in, but I do not like the unhusbandlike and slovenly practice, and therefore I harvested the whole, and it turned to a tolerable good account.

1771.

Acres.

No. 1.	Summer Vetches cut up for horses,	—	8, dunged,
2.	Turnips,	—	10, dunged,
3.	Barley, and clover,	—	8,
4.	Fallow,	—	6,
5.	Wheat,	—	10,
6.	Vetches,	—	10,
7.	Beans,	—	8, dunged,
8.	Wheat,	—	5,
9.	Turnips,	—	16, dunged,
10.	Winter Vetches,	—	8, dunged,
11.	Winter Vetches,	—	7, dunged,
12.	French Wheat,	—	10,
13.	Turnips,	—	13, dunged,

No. 9, I intended to have sown with barley and clover, but it was so excessively foul, I found nothing would do but a summer fallow and turnips. I sowed my turnips very early, and in the last hoeing threw in some clover-seed, which grew; and notwithstanding my turnips were fed off by sheep, I had an exceeding good crop of clover the following year; my reason for it was to raise hay and green food enough for my stock, which should always be strictly attended to.

What vetches remained after cutting up for my horses, I harvested, and they paid me tolerably well except part of No. 1, late sown, which took much damage, and were good for little or nothing.

In the account of the field above-mentioned to be dunged, I do not mean that all were dressed with stable or farm-yard dung; no, a great many loads of compost of ashes, rubbish, &c. were laid on, particularly for the turnips. From the fifteen acres of wheat I had rather better than twenty-eight quarters of feed, not quite four sacks per acre; the barley run to about twenty-two quarters; and the clover took exceedingly well. From the beans I had only twelve quarters; the French wheat produced twenty-three sacks, and a few pecks over; my vetches were in general good, and the turnips remarkably so. I had only six acres of vacant summer fallow, and I thought it enough; if I had had dung plenty, I certainly should have tried

tried for a crop of vetches there also; but as it was, I laid on forty-eight waggon load of chalk, eight loads per acre, before the last ploughing for seed,

We are now getting into the year 1772, but as my letter already has filled my paper, I must defer the rest to another opportunity. Adieu, Mr. Sylvan, and believe me, with the greatest sincerity,

Your admirer, and friend,

Dec. 9, 1777.

C. WILLIAMSON.

ART. III. *Summary of the Discovery of the great Antiscorbutic Quality of Malt.*

IN the Farmer's Magazine for March, page 49, you gave a preservative against the sea scurvy, by the account of Captain Cooke's voyage round the world, with the loss only of one man; be so obliging as to add the following remarks, and you will very essentially oblige,

Your humble servant,

J. C.

Captain Cooke begins his list of stores with Malt. Of this, he says, "was made sweet-wort, and given not only to those men who had manifest symptoms of the scurvy, but to such also as were judged to be the most liable to it." Dr. Macbride, who first suggested this preparation, was led, as he says, to the discovery, by some experiments that had been laid before this Society; by which it appeared, that the air produced by alimentary fermentation was endued with a power of correcting putrefaction. The fact he confirmed by numerous trials, and finding this fluid to be fixed air, he justly concluded, that whatever substance proper for food abounded with it, and which could be conveniently carried to sea, would make one of the best provisions against the scurvy; which he then considered as a putrid disease, and as such to be prevented or cured by that powerful kind of antiseptic.* Beer, for instance, hath always been esteemed one of the best antiscorbutics; but as that derived all its fixed air from the malt of which it is made, he inferred, that malt itself was preferable in long voyages, as it took up less room than the brewed liquor, and would keep longer sound. Experience hath since verified this ingenious theory, and Malt hath now gained so much credit in the navy, that there only wanted so long, so healthful, and so celebrated a voyage as this, to rank it among the most indis-

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F f f

penfable

Macbride's Experimental Essays.

penfable articles of provifion. For though Captain Cook remarks, that "a proper attention to other things muft be joined, and that he is not altogether of opinion, that the wort will be able to cure the fcurvy in an advanced ftate at fea; yet he is perfuaded, that it is fufficient to prevent that diftemper from making any great progrefs, for a confiderable time;" and therefore he doth not hesitate to pronounce it, "one of the beft antifeorbutic medicines yet found out."*

This falutary gas, or fixed air, is contained more or lefs in all fermentable liquors, and begins to oppofe putrefaction as foon as the working or intefline motion commences.

In wine it abounds, and perhaps no vegetable fubftance is more replete with it than the fruit of the vine. If we join the grateful tafte of wine, we muft rank it firft in the lift of antifeorbutic liquors. Cyder is likewise good, with other vinous productions from fruit, as alfo the various kinds of beer. It hath been a constant obfervation, that in long cruizes or diftant voyages, the fcurvy is never feen whilft the fmall-beer holds out at a full allowance; but that when it is all expended, the diforder foon appears. It were therefore to be wifhed, that this moft wholefome beverage could be renewed at fea; but our fhips afford not fufficient convenience. The Ruffians, however, make a fhift to prepare at fea, as well as at land, a liquor of a middle quality between wort and fmall-beer, in the following manner. They take ground malt and rye-meal in a certain proportion, which they knead into fmall loaves, and bake in the oven. Thefe they occasionally infufe in a proper quantity of warm water, which begins fo foon to ferment, that in the fpace of twenty-four hours their brewage is completed, in the production of a fmall, brisk, and acidulous liquor, which they call Quas, palatable to themfelves and not difagreeable to the tafte of ftrangers. The late Dr. Mounfey, member

* Having been favoured with a fight of the Medical Journal of Mr. Patten, furgeon to the *Resolution*, I read the following paffage in it, not a little ftrengthening the above testimony. "I have found the wort of the utmoft fervice in all feorbutic cafes during the voyage. As many took it by way of prevention, few cafes occurred where it had a fair trial; but thefe, however, I flatter myfelf, will be fufficient to convince every impartial perfon, that it is the beft remedy hitherto found out for the cure of the fea-fcurvy; and I am well convinced, from what I have feen the wort perform, and from its mode of operation, that if aided by portable foup, fcur-kroust, fugar, fago, and currants, the fcurvy, that maritime peftilence, will feldom or never make its alarming appearance among a fhip's crew, on the longeft voyages; proper care with regard to cleanliness and provifions being obferved."

member of the Royal Society, who had lived long in Russia, and had been Archiater under two successive sovereigns, acquainted me that the Quas was the common and wholesome drink both of the fleets and armies of that empire, and that it was particularly good against the scurvy. He added, that happening to be at Moscow when he perused the "Observations on the Jail-Fever," published here, he had been induced to compare what he read in that treatise with what he should see in the several prisons of that large city: but to his surprize, after visiting them all, and finding them full of malefactors, for the late Empress then suffered none of those who were convicted of capital crimes to be put to death, yet he could discover no fever among them, nor learn that any acute distemper peculiar to jails had ever been known there. He observed that some of those places of confinement had a yard, into which the prisoners were allowed to come for the air; but that there were others without this advantage, yet not sickly; so that he could assign no other reason for the healthful condition of those men than the kind of diet they used; which was the same with that of the common people of the country, who not being able to purchase flesh-meat live mostly on rye-bread, (the most acedcent of any bread) and drink Quas. He concluded with saying, that upon his return to Petersburg, he had made the same enquiry there, and with the same result.

Thus far my informer; from whose account it would appear, that the rye-meal assisted both in quickening the fermentation, and adding more fixed air; since the malt alone could not so readily produce so acidulous and brisk a liquor. And there is little doubt, but that whenever the other grains can be brought to a proper degree of fermentation, they will more or less in the same way become useful. That oats will, I am satisfied, from what I have been told by one of the intelligent friends of Captain Cook. This gentleman being on a cruize in the *Essex*, a seventy gun ship, in the beginning of the late war, and the scurvy breaking out among his crew, he bethought himself of a kind of food, he had seen used in some parts of the country, as the most proper on this occasion. Some oatmeal is put into a wooden vessel, hot water is poured upon it, and the infusion continues until the liquor begins to taste sourish, that is, till a fermentation comes on, which in a place moderately warm may be in the space of two days. The water is then poured off from the grounds, and boiled down to the consistence of a jelly; this food in the north is called *Sooins*. This he ordered to be made, and dealt out in messes, being

first sweetened with sugar, and seasoned with some prize-wine he had taken, which though turned sour, yet improved the taste, and made this aliment no less palatable than medicinal.

ART. IV. *Advantage of Soap-Ashes and Feathers as Manure.*

Mr. SYLVAN,

IN April last, I top-dressed a piece of clover land with ashlep, or soap-boilers ashes, at the rate of four bushels per acre, leaving the other half of the field in its former state. The effect exceeded my expectations. The dressed part of the field produced near double the quantity of hay as the other, although last season there appeared to be no difference in the produce. I have also used this manure with great success in low, wet, spongy, meadow land; it has apparently dried it, and made it produce larger crops of hay. I would therefore recommend it for both these purposes, and can safely answer for its succeeding. Farmers here will readily give a guinea a waggon load, and fetch it five or six miles, and find their account in so doing.

In October last, having a field ready for sowing wheat, I manured one acre of it with ten bushels of old feathers, ploughing them in as they were spread; and from the success of the experiment, am persuaded, there is no kind of manure for wheat, or summer corn land equal to it. The acre so manured, produced near six quarters of wheat; the other part only four on an average;—the quality of the land was equal.

I am, wishing you all possible success,

Old Samford, Essex,

Your most humble servant,

Oct. 4, 1777.

I. C.

ART. V. *On exempting Waste Lands from Tythe.*

Mr. SYLVAN,

MANY Societies have laid plans before the public, and offered premiums for the cultivation and inclosing waste lands, at present unprofitable; but I cannot think any premiums or encouragement can fully or effectually operate, unless such lands are made tythe-free, or the claimants of tythes have an allotted portion thereof in its natural state, to improve themselves; for the present exemption of only seven years, is a time of great expence to the cultivator, and when a return of profit might reasonably be expected, the tenth of its produce in that improved state must then be taken from him.

Setting

Setting aside all religious opinions about the matter, I am of the judgment it would be consistent with the soundest civil policy, to adopt such a measure; witness the importation of foreign wheat at the port of London, being in one week only 7630 quarters, which at forty-eight shillings per quarter, is 18312*l.* paid to foreigners, for what this country, by the blessing of Providence on the industrious labours of its inhabitants, might produce; but what is this, compared with whole importation for three or four years past?

I remain, with kind respects, your real friend,
Minchhead.

R. DAVIS.

ART. VI. *Advantage and Method of planting Boggy Land with Ash-Trees, &c.*

HAVING been pretty largely concerned in planting forest-trees on various kinds of soil, for more than twenty years past, and tried different methods; I have found, by repeated experience, that no land whatever is so proper for the growth of ash in particular, as swampy, rushy, and boggy land. Oak, elm, and poplar, will also do very well thereon. I have planted land with ash-trees, which was so boggy and rotten, that the men were obliged to stand on boards when planting, to prevent their being mired; and which, from its situation, could never be drained so as to render it fit for the cultivation of corn or grass; and it was astonishing to see their growth. Facts can be produced, which will prove, that such land (not worth one shilling per acre for any other purpose) has frequently produced, every thirteen or fourteen years, from sixty to seventy pounds worth of the finest ash poles, at a moderate price, besides leaving a proper quantity of oaks, &c. for maiden timber. Where labour is not very dear, one acre may be planted with 4500 ash sets (which is a proper quantity) for ten or eleven pounds. This I have often done, and I think it is an object well worthy attention. A small expence of weeding, pruning, &c. will arise for two or three years after planting, but then it is over; and I think, that no method whatever can be adopted, which can prove more advantageous to the owners or renters of boggy, marshy, or swampy land.

A dead foxey soil, or land that is over-run with furze and fern, will also answer exceeding well for copping. There is another kind of land which I have planted with great success, although it is hardly fit for any thing else, and that is the
sides

sides of very steep hills; particularly a northern aspect. If there is any depth of soil, ash-trees will flourish well; and Scotch firs thrive in their full glory, and proper situation.

If gentlemen should think proper to offer any premiums for the planting such lands, it would be doing real service to the country; or should take any such land to plant, I should take a pleasure in putting their men into a proper method of doing it; or in lending any other assistance, (if required) that might add to public utility, by promoting such an undertaking.

Halling, near
North-Leach, Gloucestershire.

I am, your most humble servant,

JOHN FLETCHER.

ART. VII. *Norfolk Method of setting Wheat.*

S I R,

THE Norfolk Farmers plough the land intended to be set, in the same manner as for sowing; then press it down with a light roller, just to render the land level; then the dibbler makes a double row of holes, each row about three inches from the other, upon the middle of the earth turned out of each furrow, the holes about three inches asunder in each row, and none on any other part of the land. These double rows are about six inches from each other, which six-inch spaces may be hoed with a four-inch hoe in a dry spring, if the Farmer thinks proper, but is seldom necessary unless on light soils.

The droppers follow the dibblers, and drop two kernels into each hole; if the seed is good this is quite sufficient, and perhaps only one might still be better, if the droppers could be depended on not to miss any of the holes. When they have done a sufficient quantity, the Farmer cuts some stout thorns, and draws them into a gate or gate hurdle, which is then drawn over the land; this fills up the holes, and finishes the business.

The advantages of this excellent practice are, first, a very great saving in the seed. Second, a regular crop with ears and kernels much of a size. Third, the quantity rather larger, and weight heavier, which induces the flour-makers to buy more readily, and give a better price per bushel, than for the same kind of wheat sown broad-cast.

The better the land the more likely is setting wheat to answer. Those lands near the London road, would pay the Farmers quite to their satisfaction for the trouble and expence of setting. Some consideration should be had to what the land was cropped with

with before. The very best crop to set wheat after, is a clean clover of only one year's laying; it will also do very well after clover and ray-grass of two or three years laying; and has been tried with success on olland and old-laid lands. After beans, pease, &c. where the land is more than once ploughed before the wheat is sown, or on land summer tilled for wheat, perhaps as good a crop may be had at less expence than setting, by a person following the plough, and sowing every furrow by hand.

The setting of wheat increases in many parts of this county, and is certainly worthy encouragement, as it increases the quantity of food, by taking only one-third of the seed to produce as good, or a better crop than when sown, and employs a number of poor people at a small expence. The value of seed saved, that must be sown in the broad-cast way, paying for the extra labour of setting.

Norwich,
October 19, 1777.

JOHN COOK.

For the FARMER'S MAGAZINE.

ART. VIII. *Letter from the Rev. Dr. Dumaresq, to the Secretary of the Bath Agriculture Society.*

S I R,

IT gave me no small satisfaction to learn from the newspapers, that at Bath, as it were, in the midst of fashionable amusement and pleasure, a society was forming for the encouragement and improvement of Manufactures, Commerce, Agriculture, and the Fine Arts. Agriculture is certainly the great and inexhaustible source, from whence flows the truest and most substantial riches of a nation. Those who wish well to mankind in general, cannot but rejoice to hear of that spirit of true œconomy which has of late years manifested itself in most parts of Europe, by the voluntary associations of noble-minded persons; a spirit which has made its way into the most northern regions of the continent.

Unskilled and unexperienced as I am in the chief objects of it, I could not help admiring it many years since, in the nobility, gentry, and clergy, of Ireland. I was glad when it afterwards began to shine with an additional lustre in our capital; and am still more so now, to see it diffuse itself also in my neighbourhood, hoping that considerable advantages may be derived from it.

When

When a nation is arisen to the height of wealth, or credit and apparent wealth, many schemes may be carried into execution, which in a state of mediocrity, still less in poverty, would not be practicable. Most desirable it is, that as a turn to liberality, not to say profuseness, now universally prevails, men might engage in plans of most extensive and lasting benefit to the community, as I apprehend, has been particularly the case of late in those counties where inland navigations have been improved to a surprizing degree.

Within these two last centuries, we have been rising in wealth and power. By this time we are got to, (I fear a little passed) our zenith. Many circumstances seem to threaten an approaching decline, which indeed, from the common course of things, may naturally be expected. In such a case, it will be happy for us, as a nation, if while in prosperity, through a wise foresight, with the blessing of providence, we shall have secured to ourselves those comforts and supports, those real and never-failing riches, which a most advantageous situation, a temperate climate, and a fruitful soil, will liberally yield to a sagacious, diligent, and industrious people.

That the scheme which you have lately entered upon, tends greatly to promote those desirable ends, I have no room to doubt, from some publications in the papers; and the information more directly conveyed to me by your circular letter, which lately came to my hands. I heartily wish the newly-instituted society much success in their public-spirited and humane undertaking, more especially in what relates to Agriculture; and am sorry it is not in my power to assist in carrying it on, but must for the present confine myself to the small annual quota of One Guinea. If it proves acceptable, I shall think it an honour to see inserted in the list of so many worthy subscribers, the name of him who is,

Sir, your most obedient humble servant,
Yeovilton, Nov. 13, 1777. D. DUMARESQU.

ART. IX. *Copy of a Letter from a Gentleman of Sherborne, to the Secretary of the Bath Agriculture Society.*

S I R,

I N looking over the proposals of the Society, I am particularly pleased with that which relates to the offer of premiums for the encouragement of industry and good behaviour among servants in husbandry, and labourers; but I could wish to see this extended to poor manufacturers, spinners, knitters, &c.

&c. General as it is to exclaim against the poor, I am of opinion, encouragement would make them better. Little noticed while they are wearing out their strength for a bare subsistence, left unassisted, or so scantily supplied under sickness, or accident; that they are depressed their whole lives after. And when their labour is totally over, they have no better prospect in view, than the tyranny of Overseers, a badge of disgrace, and the confinement and nastiness of a work-house; the entrance into which, is to deprive them of all the little property they had with hard labour attained by the sweat of their brows, and pinching frugality. Poor excitements these, to either industry or frugality. Would to God that it was only within the sphere of my own observation, that this a true picture of the state of the industrious poor! If the Society therefore can fall upon any plan to give the spring of encouragement to such, I think it will produce most beneficial effects, and communicate the most extensive happiness. In this we bear the nearest resemblance to the Source of all Good, who showers down his blessings with a liberal hand on all, without distinction.

I am, sir, your most sincere friend,

R. G — Y.

ART. X. *Mode of cultivating Turnips in Suffolk.*

Mr. SYLVAN,

OUR course of crops here are mostly in the following order. First, turnips; Second, barley; Third, clover; Fourth, wheat. For turnips proceed as follows:

The first earth should be the ploughing in the wheat stubble deep, in November; it should receive at least five ploughings more, as it suits the Farmer's convenience, between this and the last, or sowing earth, which should not be later than the last week in June, or the 10th of July, at farthest. As lime is the readiest and cheapest manure in these parts, it will claim the preference; otherwise twenty loads, (each load as much as three able horses can draw) of rotten dung, or muck, from the barn yard, turned up in April, or early in May, and carted on, previous to the sowing. One quart of seed is fully sufficient for an acre; new seed will come up three days sooner than old.

What is ploughed must be sown on the same day, to prevent the earth from being too dry for the seed to vegetate. Twice

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G g g

harrowing

harrowing in a place will be sufficient. When the turnips are within three days of being fit for hoeing, and the weather dry, run a pair of light harrows over the field, in a direction contrary to that of sowing, previous to their being hoed. This is always practised here, and found to be of much service.

The turnips should be hoed with a seven-inch hoe. The distance should be twelve inches from plant to plant. The workmen cannot set the plants out properly for less than six shillings an acre, hoeing twice, and they expect drink.

The crops with us vary, from forty shillings to three pounds an acre in value, and to be fed off the land.

Manner of feeding:

A rod in width is first drawn off round the land, to prevent the cattle from spoiling them by getting near the hedges for shelter in bad weather. The Farmer first puts in his best beasts; second, his best wether sheep; third, his lambs to eat the refuse.

As soon as the field is cleared of his stock, he ploughs up the land for barley, and gives four earths; sows three bushels of barley, half at top, and half under furrow. Red clover seed fourteen pounds harrowed in with the barley, and rolled after the barley is come up. The produce from twenty-five to forty bushels per acre.

The turnip is our fallow, and the better the turnip crop, so is the barley, the clover, and the wheat.

The drawing the turnips and carrying them to another piece of land, will make a difference of from five to eight bushels an acre. When the land is too wet to feed them off, lay on a greater quantity of lime or muck.

Ipswich,

I am, &c.

Nov. 19, 1777.

NATHANIEL TURNER.

ART. XI. *On the proportioning Grass and Arable Land for Farms.*

MR. SYLVAN,

I Have received many useful hints from your Magazine within the course of the last year, for which you have my thanks in common with those of the public, to whom much service has been rendered by your work. It was certainly a great mark of your prudence to establish a correspondence with practical Farmers in the different parts of this kingdom, and I doubt not but they will readily communicate such observations relative to their own modes of practice, as may be productive

of general use, and if you should think the following remarks worthy a place in your Miscellany, they are much at your service.

I am, sir,

Near Norwich, your humble servant,
December 3, 1777. THOMAS JACKSON.

In the proper management of a farm, much depends on a judicious proportion of arable to pasture land. In this respect, it may perhaps be difficult to lay down a certain general rule. The circumstances of the country, the nature of the soil, the situation with respect to markets, with the rent that is gained for grass land, must be considered as the best guides in this point: However, in nine-tenths of the kingdom, the grass land of every farm is rated much higher than the arable, and pays the landlord as well as the tenant much better. In many places, farms which consist wholly of dairy and grazing exceed all others. The difference of rent is an object of the first importance: one general maxim may, however, be recommended, that it is much better to have too much grass than too much arable; the one may at any time be remedied, and with profit, but that is not the case with the other.

When it is profitable to increase the grass land of a farm, the landlord's first attention is, to begin the tillage of such land; and whether he executes the respective operations himself, or pays the old tenant for them, makes no difference. In either case I beg leave to recommend the following plan:

Let the stubble of the preceding crop be turned in very soon after harvest; and in October ploughed again on to the small three-foot ridge, to lie the winter, and the whole be well water-furrowed. In the spring, as soon as the soil will admit ploughing, be ready for the work, and gain by ploughing and harrowing, a very fine tilth by the first week in May, if possible. When this fine tilth is gained, leave the land for a fortnight or three weeks, that all seeds may sprout; you will probably have a full crop of them; then turn them in by a fresh earth, and proceed with your tillage through the months of June and July. I shall not determine between the advocates for a spring or an autumnal sowing of grass seeds; but in the present case, the latter is much to be preferred; not because it is best, but because the work will be done within the year of improvement. The land must be fine, and perfectly level by the first of August, then let the grass-seeds be sown, and the land harrowed and rolled.

As to the seeds, by all means reject the chance medley of hay-lofts. I would also advise you to reject ray-grass, while clover is cheap and excellent; mixed with burnet it is still better; also the narrow-leaved plantain, called in the north rib-grass. I should think sixteen pounds of white clover, ten pounds of burnet, and ten pounds of rib grass, sufficient for an acre of land, and the price of the whole does not exceed fifteen shillings and six-pence.

In case the soil be sandy, gravelly, a dry chalk, or light lime-stone loam, it will be advisable to substitute saintfoin instead of these grass-seeds. The improvement will be very great, and probably render the land of six times its former value. By proceeding upon this plan, you will be able to lay down any part or all of your farm to grass in one year's time; the same year that is also occupied by all the undertakings, by which means you will be only one year out of your money. Disengage yourself at once from the improvement of each tract, and in the worst case, lose but one year's rent of the land.

The importance of thus bringing a just proportion of grass and arable land, or of converting all the land to grass, is clearly very great; very few of my readers but can recollect vast tracks of land which yield but a poor produce, while arable; that would pay a great rent in grass. All cold, wet soils, do very well in grass, but very badly in arable. An improver will in no instance find such great and certain profit, as by this article of laying much arable land down to grass.

Half and half on arable farms is not a bad proportion; but two-thirds grass, and one-third arable, is a still better. There are some objections to total grass farms, in certain cases. If a part of the land is dry enough for turnips, the tenant should have a field of them every year. A few fields arable would, for that purpose, be sufficient, one every year in turnips, the others in corn. In case the land is clay, the same might be done with cabbages; of which one field would be sufficient. They may be planted on the same land every year, and the crops will each year be better than the other.

Let every one remember, that his estate, while under grass, is constantly improving; if he changes his plan at any time, and ploughs up his grass, he is sure of extraordinary profit on that account. This should convince him, that if he does err, it should be on the grass side of the question.

In laying land of the proper sort to saintfoin, the profit is likewise very great, and more particularly so in countries that have not adopted the culture in general. There are many extensive

tanfive counties in divers parts of this kingdom, that know nothing of this excellent grass. The proper soils for saintfoin seldom let for more than five or six shillings an acre. These lands are of difficult improvement; no management can make them of equal value with the sowing saintfoin, which is the cheapest method in the world of executing the business.

For these, and many other reasons, I cannot but recommend to all spirited improvers, to pay much attention to this important point of laying down land for grass; the advantage from this management will be great, for most soils admit of laying either with natural grasses, or with saintfoin. As to lucerne, and other more delicate plants, no gentleman who improves to let, should think of them; they are proper only for their own attentive management.

[We believe the general practice and experience of Farmers, will rather militate against Mr. Jackson's advice; though Mr. Miller, and a few other writers, recommend an autumn sowing: The best mode of laying down grass land, we apprehend to be after turnips, especially if fed off by sheep; nor do we consider, that sowing barley or oats can at all damage the grass; though, on the contrary, the grass may injure the corn; but that is a risque always to be run.]

ART. XIII. The HOUSEKEEPER'S DIRECTORY.

[Continued from Page 396.]

To preserve Golden Pippins.

TO every pound of pippins put a pound of double-refined sugar, and a pint of clear spring water; set it on the fire, having first pared the pippins; take eyes and stalks out, put them into the sugar and water, cover them close, and boil them briskly half a quarter of an hour; then let them cool, and boil them again as long as before; repeat this two or three times, till they are very clear, when you may cover them close.

To preserve Quinces white or red.

Core and pare the quinces; those which you would have white, put into it a pail of water for two or three hours; then take as much sugar as they weigh, to which add as much water as will make a syrup to cover them; boil the syrup a little, then put in the quinces, and let them boil as fast as you can, till they are tender and clear, afterwards take them out, and boil the syrup a little higher alone; and when it is cold,

put

put the quinces up in pots. If you would have them red, put them raw into sugar, and let them boil gently, being close covered, till they are red; you must not put them into cold water.

To preserve Raspberries.

Take the juice of red and white raspberries; if you have no white raspberries, use half codling jelly; put a pint and a half of juice to two pounds of sugar; boil and scum it, then put in three quarters of a pound of large raspberries, boil them very fast till they are a jelly, and clear, but do not take them off the fire for a quarter of an hour after they have begun to boil fast; after which, put them into pots or glasses, the raspberries first; then strain the jelly from the seed, and put it to the raspberries; when they begin to cool, stir them, that they may not all lie upon the top of the glasses: when they are cold, lay paper to them; first wet the paper, and dry it in a cloth.

To dry Plumbs.

Weigh the plumbs, and to every pound of plumbs put a pound of double-refined sugar; scald the plumbs, take out the stones, and peel away the skins; lay the plumbs on a dry cloth, then wet the sugar a little, and put it on the fire; keep stirring it one way, till it boils to sugar again. Take some of the sugar, and put it at the bottom of the preserving pan, and lay the plumbs upon it, and strew the rest of the sugar upon them; let it stand till it is melted, then make it scalding hot (but suffer it not to boil) twice a day, and when the syrup is very thick, lay them on glasses to dry, and keep them always warm, sifting a little sugar over them till they are almost dry; wet the stones in the syrup, dry them with sugar, and put them into the plumbs, and when they are quite dry, put them into boxes with papers between.

Syrup of Coltsfoot.

Take coltsfoot six handfuls, maiden-hair two handfuls, hyssop one handful, root of liquorice ten drams, boil them in a pottle of spring water, till a pint is consumed; then strain it, and clarify it with whites of eggs; in clarifying, add two pounds of powder sugar, and boil it till it comes to be almost as thick as honey.

[*To be continued.*]

ART. XIV. *On the Profanation of the Sabbath.*

Mr. SYLVAN,

THE profanation of the Lord's day being a growing evil, in the dreadful consequences of which, every person is deeply interested, you are desired to convey to your readers a remedy most faithfully and effectually applied for the cure of the same evil about forty years ago by the then Lord-Mayor of London, professedly one of the best Magistrates that ever presided in that capital. A high sense of duty inspired his mind, determining him to use the influence of his office to the honour of GOD and Religion. In the first months of his Mayoralty, he caused an especial court to be called, and an order was then issued with an account of the transactions of the city in the year 1737, thus introduced:

"The following Order will remain an everlasting proof that
"the high praises bestowed on the present chief magistrate of
"the city of London, flow not from any partial complaisance
"for those amiable qualities in private life, which had so long
"and so remarkably distinguished him, but from a just sense
"of his public virtues and abilities."

BARNARD, MAYOR.

An especial court held on Shrove-Tuesday, that is, the 14th day of February, 1737, and in the eleventh year of the reign of George the Second, of Great-Britain, &c.

WHEREAS it is very notorious that great numbers of Traders do exercise the works of their ordinary calling on the Lord's Day, contrary to the several statutes in that behalf; and this court being resolved to discourage all such scandalous practices; and to bring the offenders to punishment, doth hereby strictly charge and command all public officers of this city to use their best endeavours to prevent any person or persons hereafter from selling or exposing to sale any thing in the streets; and to take notice of all such who shall at any time hereafter exercise their ordinary calling or trades on the Lord's day. And to the end the negligence, partiality, connivance, or other unlawful practices of any of the officers aforesaid may not prevent the discovery and due punishment which the laws have appointed to be inflicted on such offenders, this court doth recommend it to all the citizens and inhabitants of this city and liberties thereof, who shall at any time hereafter have knowledge of any such offences; and they are by these presents desired and required to give information thereof, as well

as

as of the negligence of any of the aforesaid officers, to his Lordship, or some other of the said Justices, all which offenders, as well as officers neglecting their duty in the premises, this court is determined to prosecute with the utmost severity of law.

MAN, TOWN-CLERK.

This Edict effectually awed the delinquents against whom it was levelled. The Lord's day was immediately observed throughout the city with a decency not now to be seen; reflecting shame on the present police, which permits so general a profanation of the Christian Sabbath.

The following extract from the admired Judge Blackstone's Commentaries, vol. 4, p. 63, may serve to shew how he harmonizes in judgment with Sir John Barnard:

"Profanation of the Lord's day is a ninth offence against God and Religion, punished by the municipal laws of England; for besides the notorious indecency and scandal of permitting any secular business to be publicly transacted on that day, in a country professing christianity, and the corruption of morals which usually follows its profanation, the keeping one day in seven holy, as a time of relaxation and refreshment, as well as for public worship, is of admirable service to a state, considered merely as a civil institution. It humanizes, by the help of conversation and society, the manners of the lower classes; which would otherwise degenerate into a sordid ferocity and savage selfishness of spirit; it enables the industrious workman to pursue his occupation in the ensuing week with health and cheerfulness; it imprints on the minds of the people that sense of their duty to God, so necessary to make them good citizens; but which yet would be worn out and effaced by an unremitted continuance of labour, without any stated times of recalling them to the worship of their Maker.

What follows is taken from the Memoirs of Sir John Barnard, lately published:

"I remember to have heard an answer once made by an honest Farmer to Anthony Collins, Esq; of Essex, author of several infidel books, which sets the benevolent design of the Sabbath in the most extensive view. That gentleman, from virulent hatred to Christianity, frequently used to give his tenants a dinner on a Sunday, provided they would not that day go to church. After dinner he took occasion to harangue them on the folly of minding the parson, and the loss they all suffered by doing nothing one-seventh part of the year. His audience were almost proselyted to his opinion, when an old Farmer

Farmer shrewdly replied, he thought the 'Squire with his new notions was no friend either to them or their cattle; for ye all well know, faith he, rest one day in the week is needful both for man and beast; without it both would soon lose flesh and strength too; and so, I believe, our forefathers were wiser than the 'Squire."

"What friend to God or man can consider these self-evident truths, and not grieve for the fate of this kingdom! where it is become fashionable amongst the great, seldom to worship God in public; always to travel on a Sunday: to represent Religion as useful only to keep the vulgar in awe: which the vulgar very soon understanding, will no more enter within the church door, than the 'Squire or my Lord himself."

To these observations of modern writers I shall subjoin an extract from an ancient celebrated book called *The Practice of Piety*, which in the space of a few years passed through three and thirty editions.

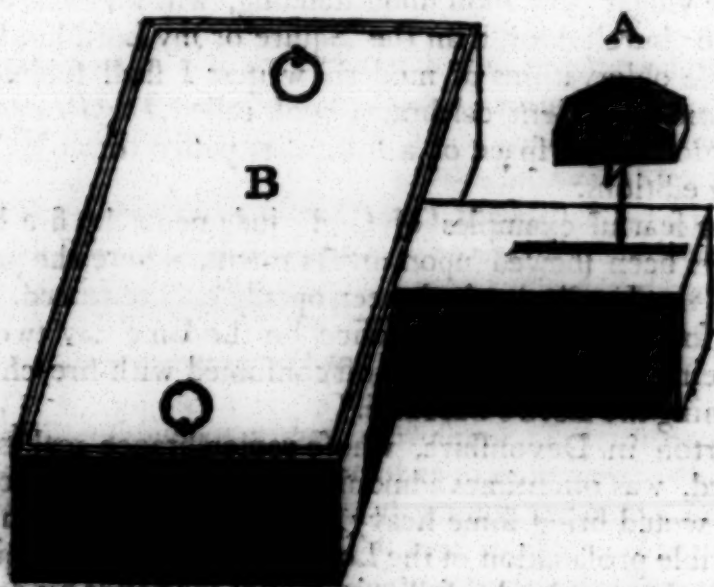
"Many fearful examples of God's judgments by fire have in our days been shewed upon divers towns, where the profanation of the Lord's day hath been openly countenanced.

"Stratford upon Avon was twice on the same day twelve-month, being the Lord's day, almost consumed with fire, chiefly for profaning the Lord's Sabbaths."

"Tiverton in Devonshire, whose remembrance makes my heart bleed, was oftentimes admonished by her godly preacher, that God would bring some heavy judgment on the town for their horrible profanation of the Lord's day, occasioned chiefly by their market on the day following. Not long after his death, on the third of April 1598, God, in less than half an hour, consumed with a sudden and fearful fire, the whole town, except only the church, the court-house, and the alms-houses, or a few poor people's dwellings; where a man might have seen four hundred dwelling-houses all at once on fire, and above fifty persons consumed with the flame. And now again, since the former edition of this book, on the 5th of Aug. 1612—fourteen years since the former fire, the whole town was again fired and consumed, except about thirty houses of poor people, with the school-house, and alms-houses. They are blind who see not in this the finger of God. God grant them grace, when it is next built, to change their market day, and to remove all occasions of prophaning the Lord's day. Let other towns take warning by their neighbour's chastisements, fear God's threatenings, and believe his prophets."

"Many other examples of divine judgments might be alledged; but if these are not sufficient to terrify thy heart from the wilful profanation of the Lord's day, proceed in thy profanation; it may be the Lord will make thee the next example to teach others to keep his Sabbaths better."

ART. XV. *A Description of the portable Engines for weighing Hogsheads, Bales, Cattle, Hay, Straw, or any other great Weights, as they are now made by Mr. Sharp, of Leadenhall-Street, London.*



THE engine is contained in a box of the shape and form described in the print, which is on a scale of half an inch to a foot; common standard weights are to be used, and one pound in the bucket at A, will exactly balance 112 pounds on the bridge at B, and greater or less weights in proportion.

A rough outside case is made to receive the engine by way of package for shipping, or land-carriage, and which being let into the ground even with the surface, Hogsheads or greater weights, are easily rolled upon it, and the engine may conveniently be lifted out by two persons, and carried to any other place, to be housed or used as occasion may require, leaving the rough case in the ground as a receiver for the engine when wanted for use again.

If horses, oxen, loaded carriages, or other bulky things, too large to stand upon the bridge at B, are to be weighed, a frame or platform is made to lay upon the bridge, with proper supports

ports at each end to prevent its tilting up, while the carriage or horses move on, and so contrived as to be easily withdrawn till the balance is taken, and then they must be returned to their places, to support the platform when the load moves off again.

But whenever any additional frame is used, it must be balanced by shot, small stones, &c. in the bucket, and then the neat weight may be taken by standard pounds, and ounces.

This engine, though so small as to be easily lifted from one part of a wharf or warehouse to another, is yet capable of weighing so much as three or four tons without injury to it. I have one of the above dimensions at my own manufactory, upon which loaded carriages are constantly weighed by the addition of a large platform, as above described, properly placed upon it.

It is not subject to be out of order, being very simple in its construction; though care should be taken to oil the moving parts to prevent friction; and in case by violent accident any thing should be moved from its place, it may easily be adjusted and proved by the following rule:

Directions for adjusting the portable Weighing Engine.

If the bucket A, is too heavy, the bridge at B, must be lifted out, and the leaden weight upon the long lever moved as many notches farther from the center pin, as will make the bridge something heavier than the bucket, (which it always should be) so that by dropping a few grains of shot into the bucket, an exact ballance is easily made; then, if one hundred weight or 112lb. on the bridge is exactly ballanced by one pound in the bucket, it is right so far; after this, the proportion must be proved by putting two, three, or more hundred weights upon the bridge, which, if as many more pounds in the bucket do not exactly ballance, then the proportion is wrong, and must be adjusted in the following manner:

If the bucket rises quicker when the load upon the bridge is increased, then the bucket branch must be removed farther from the center pin, taking care to fasten the screws firm after any removal; but if upon increase of hundreds on the bridge, and an equal increase of pounds in the bucket, it will not rise, then the bucket must be moved nearer the center pin; after this, the bridge and bucket must again be ballanced by the leaden weight, and the engine will be perfect; so that a quarter of an ounce will ballance one pound three quarters; half an ounce, three pounds and a half; one ounce seven pounds;

pounds; two ounces, fourteen pounds; and one pound, one hundred weight, &c. &c. to any weight above-mentioned; but this need never be done, except it has received apparent injury.

I have sent many of them to the West-Indies, for weighing hogheads of sugar, and apprehend they will be found very useful for farmers, wharfingers, carriers, inns, and grocers, or for collieries, lime-wharfs, or ships use.

JAMES SHARP,

No. 15, Leadenhall-street, London.

ART. XVI. *An excellent Top-Dressing for Pasture Land.*

TAKE one pound of salt-petre, beaten small; twelve pounds of common salt, sixteen bushels of coal or wood-ashes, mix them well together, and sift them over an acre of land in December, or the beginning of January. This will produce grass of the trefoil kind, and greatly invigorate the land.

A PRACTICAL FARMER.

[We give the above a place, but imagine the Farmer will think his time very ill bestowed to mix the ingredients uniformly together. Ashes either of coal or wood are a most excellent manure, but how a pound of salt-petre can be distributed in sixteen bushels, we know not, or what good can be produced if it could, we will never adventure to decide.]

For the FARMER'S MAGAZINE.

ART. XVII. *On a School for Agriculture, &c.*

S I R,

SOME time since, on turning over Harte's Essays on Agriculture, I had it in contemplation to propose to the public a School for Husbandry and the Belles Lettres. It becomes not any one to speak much of himself; let me therefore only say, that I have attended to Agriculture in most of its branches as closely as I possibly could, for many years, in all the varieties of soil. You will immediately perceive, from the intimation of Mr. Harte's, in the following proposal; that he did not consider the improvement of the young gentlemen in classical learning, would be at all impeded, but rather promoted by attending to Agriculture; and the experience of every one who has led a studious life, will evince, that amusements in the open air give a certain vigor to the mind, which renders study
more

more easy and pleasant. The mind can bear close application only to a certain degree, and ought to be frequently re-invigorated by amusement, and lighter studies.

My proposal is as follows:

An Academy for Agriculture and the Belles Lettres, is proposed to be opened at Honiton, by the Rev. William Lamport, who would take under his care eight or ten young gentlemen, from twelve to fifteen years of age, who have been already initiated in the languages, for their instruction in Agriculture, and their farther improvement in the Greek and Latin Classics, &c.

"As to Agriculture, I would humbly propose, that a School for Husbandry was established in every county, where an expert Master in the methods of Agriculture should teach at a fixed salary. I doubt not but some such method as this would tend to make good husbandmen." Lord Molesworth's proposals for employing the poor. *AnnO*, 1681.

"Something (says the ingenious Mr. Harte) may be remarked in regard to the education of rich men's children, as well as those belonging to the poor. Cowley wished to see a college founded in each of our Universities, for promoting the knowledge of Agriculture; and perhaps that wish was formed upon reasonable expectances of some success; for according to the best of many men's observations upon the subject, the proper time to infuse that useful part of natural philosophy, called husbandry, is in the earlier stage of life, when there is a curiosity and impatience after knowledge; and if practice could here be joined with theory, amusement in the fields, enjoying the open air, exercise and activity, agree well with the turn and cast of young people: Not to mention a revolution of perpetual variety, which is very engaging at their age. It is one point gained, without doubt, to be enabled to read the husbandry works of Cato, Varro, Virgil, and Columella, (Hesiod, and Xenophon) with taste and knowledge. It may open a new walk on classical ground, and in all probability, give young men certain pre-dispositions in favour of Agriculture; yet still the whole combined together will produce but slight effects, unless we call in the assistance of facts and experience.

"Something, in one shape or other, ought certainly to be done; and the complaint of Columella should be removed, if possible; who says, with some degree of warmth, "*Agricolationis doctores, qui se profiterentur neque discipulos, cognovi.*" It is hardly possible but that a gentleman must lose by husbandry, unless he understands it." HARTE'S ESSAYS.

"Experience

"Experience is an admirable foundation for any kind of structure, but in Agriculture the must be the structure itself."

YOUNG's Experimental Agriculture.

I have a few fields for making experiments, in which I propose to realize, by practice, the plain and fundamental principles both of the Old and New Husbandry. A faithful and accurate account of these experiments will be occasionally published in some one or other of the periodical prints, and minutes of them regularly taken by the young gentlemen, who will likewise be instructed in surveying and measuring of land.

As I do not know that any one has gone before me in this arduous task, I hope for the encouragement and assistance of every lover of Agriculture.

Da facilem cursum atque audacibus annue cœptis,
Ignarosque viæ mecum miseratos agrestes,
Ingredere; & votis jam nunc assuesce vocari.

VIRGIL, Georg. i. v. 40.

Be thou propitious, friend, and guide our course,
And to our first endeavours add thy force;
Regard with favouring eye our mean affairs,
And aid the Master with the Ploughman's cares.

I am, sir, your humble servant,

Honiton, Nov. 13, 1777.

W. LAMPORT.

ART. XVIII. *On raising Potatoes from Seed.*

Mr. SYLVAN,

MY reasons for promoting the cultivation of Potatoes from Seed, are, first, that it increases the quantity of food for the poor, at a less expence; as an acre cannot be planted in the common method for less than twenty-four or twenty-five shillings, the mere purchase of the roots. Whereas the procuring plants from seed will not amount to more than four or five shillings; so that potatoes of the best kind, to the amount of twenty shillings per acre, will be preserved for food, instead of being planted; which will be a considerable saving, according to the number of acres planted in this method.

Second, Various sorts of potatoes are produced from the seeds of the same apple; so that the Farmer will have it in his power, or at his own option, to preserve for himself those sorts that best suit his particular soil, and to dispose of the rest either by sale, or as food for cattle.

Third,

Third, Potatoes will, after a few years, unavoidably degenerate, and decrease in produce; while those lately raised from the seed will produce at least one-third more than those which have been continued in the same soil, or can be purchased from other counties; unless the Farmer could certainly know that the potatoes he purchased were lately raised from seed.

For these reasons, this method appears to be of publick utility, and to deserve particular attention and encouragement; especially as the process is very easy.

Let the Farmer gather the apples of any good sort in October; hang them up in a warm room till Christmas, then wash out the seeds; dry them on paper, and preserve them till spring; then sow them in rows one foot asunder, in well prepared ground, and when three inches high, gently earth them up: About three weeks after, transplant them into land well turned and dunged, and dig them up in autumn.

This method is recommended by Dr. Hunter; I have tried it several times, and found it answer all the encomiums that gentleman has bestowed upon it.

I am, your humble servant,

WILLIAM LAMPORT.

ART. XIX. *On the Cultivation of Saintfoin.*

Mr. SYLVAN,

THE pleasure I have received from many accounts given in your Magazine, of the different methods used in husbandry, induces me to comply with your request, in sending you my thoughts on the cultivation of saintfoin.

As this plant is mostly cultivated on poor, dry, shallow soils, and has in general been found to succeed best there; I have not the least doubt but Mr. Tull's method of raising it in drills, is the best. Upon poor, dry, shallow, chalky soils, this plant, sown broadcast, is found to succeed better than when sown broadcast on richer lands, where the grass and weeds too frequently get up, and destroy it. But were it to be sown in drills or rows, at twenty inches distant row from row, and the spaces between kept clean, there cannot be the least doubt but it might be kept vigorous and strong, as long as the owner might chuse to continue it. It is true, the crop would not be so large the first two or three years, but it would be continually increasing; and after that time, I believe it would equal the best broad-cast, even in its most flourishing state.

Our

Our soil about Saffron-Walden is shallow, with a chalk under it; and, to the north especially, not very rich, but sweet and dry.

I have a field of saintfoin that was sown broad-cast last spring, and much pains were taken to clear it thoroughly. The plants came up well, and grew vigorously; but although hand-hoed several times in the summer, it is at this time so full of weeds, that I am persuaded it will not continue above two years at most.

My future attempts in cultivating this plant, shall be according to the new method, by drilling, not doubting but it will succeed far better. From repeated observation, I am convinced, that lucerne, and burnet also, may be more advantageously cultivated in that method, upon many soils, than in the usual broad-cast way; and I am satisfied that the same success would attend most of the roots, feeds, and plants, cultivated in this kingdom, if raised in a mode similar to this.

The interesting and important question, is not, whether the old or new husbandry, is the most advantageous in a general view of practice? Each kind has its advocates, who bring experiments to justify their favourite practice; and in many instances each may be right. I shall not presume to determine a point on which so much may be said on both sides; but as the old method is more generally practicable, it perhaps is on that account the most useful. But the question most necessary to be determined, is, whether upon certain lands particularly circumstanced, the new method may not be advantageously practised, where the old one cannot, and this in a great variety of articles? I think it may; and I am satisfied, the true judgment in practice is, to adopt both, as different circumstances may render it necessary.

Clover is very extensively cultivated, so as greatly to exceed the three articles above-mentioned taken together. But I have good reason to believe, that either of them, if cultivated on suitable land, would be equally profitable. It must be considered, that clover seldom lasts longer than two years; and that it cannot be renewed but at a considerable expence; whereas these are abiding plants, and may be continued twenty, or as many years as you please, without the expence of fresh planting.

If these hints will be of any service to your work, you are welcome to insert them as the remarks of,

Saffron-Walden, Oct. 2, 1777.

AN ESSEX FARMER.

ART.

ART. XXI. *Directions for managing the Kitchen-Garden in December.*

THIS is commonly the darkest month in the whole year, and is subject to various sorts of weather; sometimes the ground is locked up by hard frost, and covered over with snow, and at other times it abounds with hard rains, and thick, stinking fogs, which renders it very uncomfortable stirring abroad, and is very injurious to tender plants.

You may still, if the weather is moderate, land (or earth up) those artichokes which were not so done before, as also to dig and lay in ridges such quarters of the Kitchen-Garden as are at present clear from crops, whereby the ground will be mellowed against spring.

Make hot-beds for asparagus which is designed for the table about the end of January.

Sow cresses, lettuce, mustard, raddish, and other sallad-herbs, on a moderate hot-bed, for a constant supply.

Plant in this month some Sandwich beans, which are hardier than the Windsor, and are proper to succeed the Spanish or Lisbon sorts, before the other will be fit for use.

Continue also to sow pease, that you may have a succession regularly, without any intermission, throughout the season.

You may now also sow radishes and lettuces in borders under warm walls, pales, or hedges, for an early crop.

Pick snails out of the holes of old walls, or under broken pots, or other rubbish, where they lay themselves up during the winter season, and are in those places easily taken, before they get abroad again.

Observe now carefully to pick off all dead or decayed leaves from your cauliflower-plants, which are very injurious to them, if suffered to remain, (especially when the beds are kept close covered) for they emit a sort of rancid vapour, which mixing with the circumambient air, renders it noxious to whatever plants are surrounded therewith.

Repair hedges, particularly those made of reeds, that the ground on the warm sides thereof may be ready to sow or plant early the next month.

Examine orchards, and cut off all such branches as cause confusion, as likewise all that are dead or rotten.

Be careful to give air to your cauliflower plants, whenever the weather will permit.

ART. XXII. *Directions for managing the Kitchen-Garden in January.*

IF the weather be open, you must continue dunging and trenching of your quarters for such crops as are to be sown or planted the succeeding months; and in banks situated under walls, pales, or hedges, you may plant your first crop of Wind-for beans, as also some early pease to succeed those sown in autumn; sow spinach, radishes, carrots, and early fallading on warm borders, and make hot-beds to sow early cucumbers and melons, as also for asparagus to succeed those made in December.

You must now look carefully after your cauliflower plants and lettuces, which were planted under glasses in October, to give them air if the weather be mild; as also to pick off all rotten or decayed leaves, which if suffered to remain upon the plants, very often destroy them.

Towards the end of this month (if the weather be mild) you may transplant cabbages, carrots, parsnips, and turnips, for seed, observing to hang up the cabbages by their stalks two or three days in a dry place, that the moisture may drain out from between their leaves, otherwise it will be apt to rot them.

If this month should prove frosty, (as it often happens) you must carefully cover your tender plants to secure them therefrom; and you may wheel dung upon the ground; prepare your seeds against the alteration of the weather, when your time will be more fully employed in putting them into the ground.

If the weather should prove frosty, you must lay mulch round the roots of such fruit-trees as were planted the October before, provided it is not done already, and cover your fig-trees against the walls, which will preserve their tender shoots, and not only cause the fruit to come out early, but the trees will produce a greater quantity.

In mild weather you may continue pruning all hardy fruit-trees, as pears, apples, and vines; but it will be better, to defer all stone fruits till the next month: Towards the latter end of this month, you may cut grafts of all early fruit-trees, laying them in the earth until next month, when it will be a proper season for grafting them.

You should also prepare such borders as are designed to be planted with fruit-trees the next month, by laying therein a good quantity of fresh earth, stirring and levelling it as it is to remain.

Prune

Prune all standard or orchard fruit-trees, by cutting off all decayed branches, and such as are very luxuriant, or that lie cross each other, and are ill situated.

Mend and repair all your decayed espaliers, with new poles, and plash and tie your fruit-trees thereto, observing to train their branches horizontally, and at proper distances.

In severe weather, you must cover all tender flowers; such of them as are not come up above-ground, may be covered with pease-haulm; but those that are already up, should be arched over with hoops, and covered with mats, canvas, &c. over which should be laid some wheat-straw or pease-haulm, if the frost be very severe; but whenever the weather alters, you must uncover them, for if they are kept too closely covered, they will be apt to grow mouldy and decay.

In mild weather you may plant such roots of anemonies, ranunculus's, and hyacinths, as were kept out of the ground till now, in order to have them flower after the other are past; but this should not be done when the earth is too wet.

Towards the end of this month, if the weather be mild, you should pick off all decayed leaves from your auriculas, taking as much of the earth out of the pots as you can without disturbing their roots, supplying the place with good fresh earth observing to place the pots under shelter to preserve their buds, which are now forming, from being injured by the cold.

Cover all pots and tubs of seedling flowers in hard frosts, as also from great snows: Look out for snails, and other vermin, which harbour in old walls and hedges, where they may be easily destroyed before they get abroad.

Prune up wilderness-trees, and dig up the ground in the quarters, which will preserve it from being over-run with noxious weeds; and in mild weather, prepare your ground for such fibrous-rooted plants as are to be transplanted the next month, and provide some dung to make hot-beds for sowing annual plants and flowers.

Turn over your heaps of compost, that the frost may mellow and break the clods, and continue to make new parcels at this season for a constant supply.

Your ananas, or pine-apples, which begin to shew their fruit, must be carefully tended, observing to refresh them often with water, as also to preserve a due warmth in the stove, for if they are neglected at this season, their fruit will be poor.

POETICAL ESSAYS.

Domestic Life and Manners of the
ANCIENT KNIGHTS;

[From Sir ELDRÉD of the Bower.]

THERE was a young, and valiant
Knight,
Sir ELDRÉD was his name,
And never did a worthier wight
The rank of knighthood claim.

Where gliding Tay her stream sends
forth,
To crown the neighbouring wood,
The antient glory of the north,
Sir ELDRÉD's castle stood.

The youth was rich as youth might be
In patrimonial dower;
And many a noble feat had he
Atchiev'd, in hall, and bower.

He did not think, as some have thought,
Whom honour never crown'd,
The same a father dearly bought,
Cou'd make a son renown'd.

He better thought, a noble fire,
Who gallant deeds had done,
To deeds of hardihood shou'd fire
A brave and gallant son.

The fairest ancestry on earth
Without desert is poor;
And every deed of lofty worth,
Is but a tax for more.

Sir ELDRÉD's heart was good and kind,
Alive to pity's call;
A croud of virtues grac'd his mind,
He lov'd, and felt for all.

When merit rais'd the sufferer's name,
He doubly serv'd him then;
And those who cou'd not prove that
claim,
He thought they still were men.

But sacred truth the muse compels
His errors to impart;
And yet the Muse, reluctant, tells
The fault of ELDRÉD's heart,

Tho' kind and gentle as the dove,
As free from guile and art,
And mild, and soft as infant love,
The feelings of his heart!

Yet if distrust his thoughts engage,
Or jealousy inspires,
His bosom wild and boundless rage
Inflames with all its fires:

Not Thule's waves so wildly break
To drown the northern shore;
Not Etna's entrails fiercer shake,
Or Scythia's tempest roar.

As when in Summer's sweetest day,
To fan the fragrant morn,
The sighing breezes softly stray
O'er fields of ripen'd corn;

Sudden the lightning's blast descends,
Deforms the ravag'd fields;
At once the various ruin blends,
And all resistless yields.

But when, to clear his stormy breast,
The sun of reason shone,
And ebbing passions sunk to rest,
And shew'd what rage had done;

O then what anguish he betray'd!
His shame, how deep, how true!
He view'd the waste his rage had made,
And shudder'd at the view.

The morn'g-dawn, in saffron robe,
Proclaim'd the opening day;
Up rose the sun to gild the globe,
And hail the new-born May.

The birds their amorous notes repeat,
And glad the vernal grove,
Their feather'd partners fondly greet
With many a song of love.

When pious ELDRÉD walk'd abroad
His morning vows to pay,
And hail the universal Lord,
Who gave the goodly day.

That done—he left his woodland glade,
And journey'd far away;
He lov'd to court the stranger shade,
And thro' the lone vale stray.

Within

Within the bosom of a wood,
By circling hills embrac'd,
A little, modest, mansion stood,
Built by the hand of Taste.

While many a prouder castle fell,
This, safely did endure;
The house where guardian virtues
dwell
Is sacred and secure.

Of Eglantine an humble fence
Around the mansion stood,
Which charm'd at once the ravish'd
sense,
And screen'd an infant wood.

The wood receiv'd an added grace,
As pleas'd it bent to look,
And view'd its ever verdant face,
Reflected in a brook.

The smallness of the stream did well
The master's fortunes shew;
But little streams may serve to tell
From what a source they flow.

This mansion own'd an aged Knight,
And such a man was he,
As Heaven just shews to human sight,
To tell what man shou'd be.

His youth in many a well-fought field
Was train'd betimes to war;
His bosom, like a well-worn shield,
Was grac'd with many a scar.

The vigor of a green old age,
His reverend form did bear;
And yet, alas! the warrior-sage
Had drain'd the dregs of care.

And sorrow more than age can break,
And wound its hapless prey;
'Twas sorrow furrow'd his firm cheek,
And turn'd his bright locks grey.

One darling daughter sooth'd his cares,
A young and beauteous dame;
Sole comfort of his falling years,
And **BIRTHA** was her name.

Her heart a little sacred shrine,
Where all the virtues meet;
And holy Hope, and Faith divine,
Had claim'd it for their seat.

She rear'd a fair and fragrant bow'r
Of wild and rustic taste,

And there she screen'd each favour'd
flower,
From every ruder blast.

And not a shrub or plant was there,
But did some moral yield;
For wisdom, with a father's care,
Was found in every field.

+++++

ON CHRISTMAS-DAY.

I.
O That a Muse of heav'nly kind
Would once possess my untaught
mind,
And teach me how to sing
The blessings that a gracious God,
Descending from his bless'd abode,
To man this day did bring!

II.
Involv'd in doubt, in vain we sought
For Truth,—while yet no truth was
taught,
By learned guile conceal'd;—
Religion's self was wrapt in art,
And just what Wisdom would impart,
Was to the world reveal'd;

III.
E'en Virtue varied with the time,—
What now was good, was soon a crime,
As Fashion's wheel went round;
No light had then illum'd the cause,
Nor certain rule explain'd the laws,
That good and bad should bound.

IV.
While stumbling thus in Error's maze,
Toss'd in the storm of doubtful seas,
No friendly pilot nigh;
This thought still wrung the parting
soul,
This was Life's melancholy goal,
In dismal doubt to die!

V.
Freed from our fears by heavenly grace,
Instructed now in Virtue's ways,
Where no rude darkness reigns,
Let's bless the Pow'r that made us wise,
To him let's offer sacrifice,
That heal'd the bosom's pains.

VI.
Ye sons of labour, cease your toil,
Your anxious care suspend awhile,
And join with me with the lay;
The SAVIOUR that redeem'd your state
From abject beings, made you great,
Was born on earth to-day. W.

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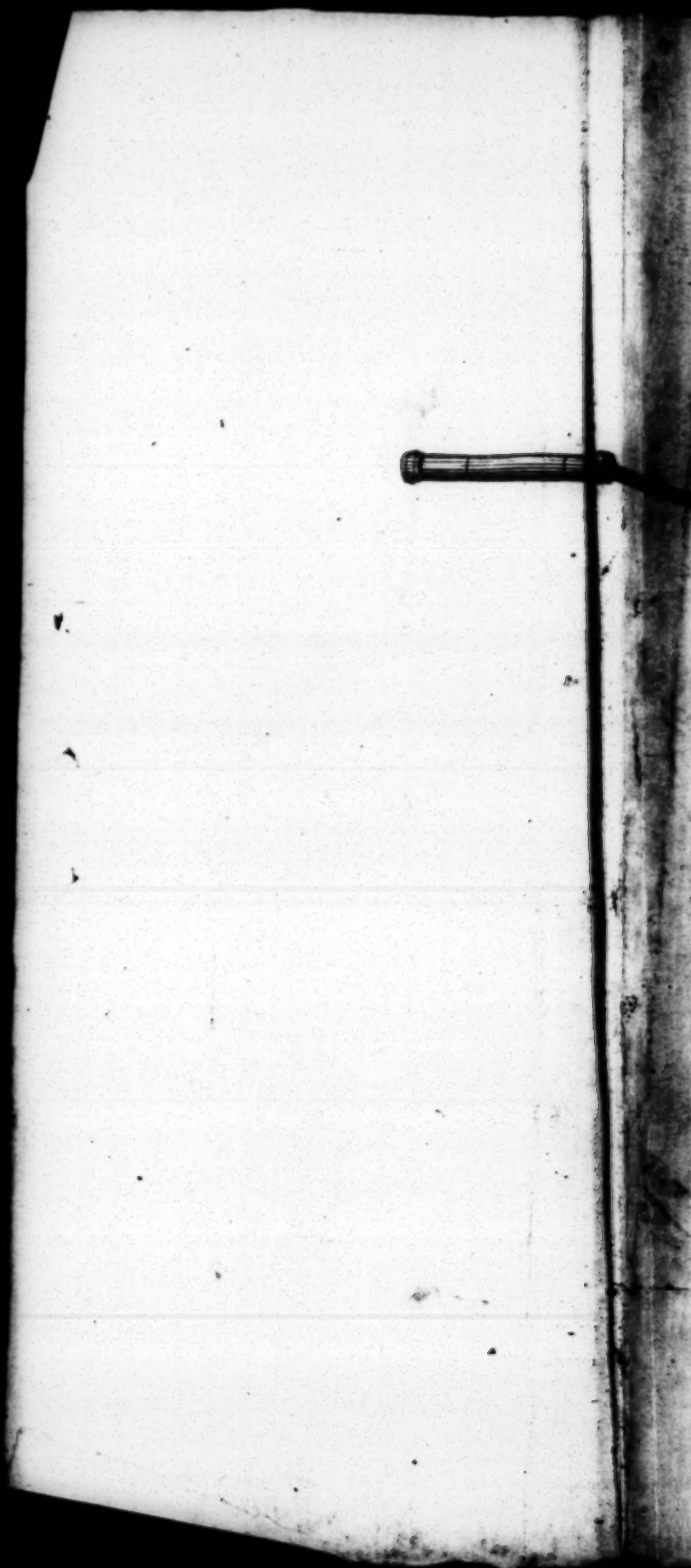
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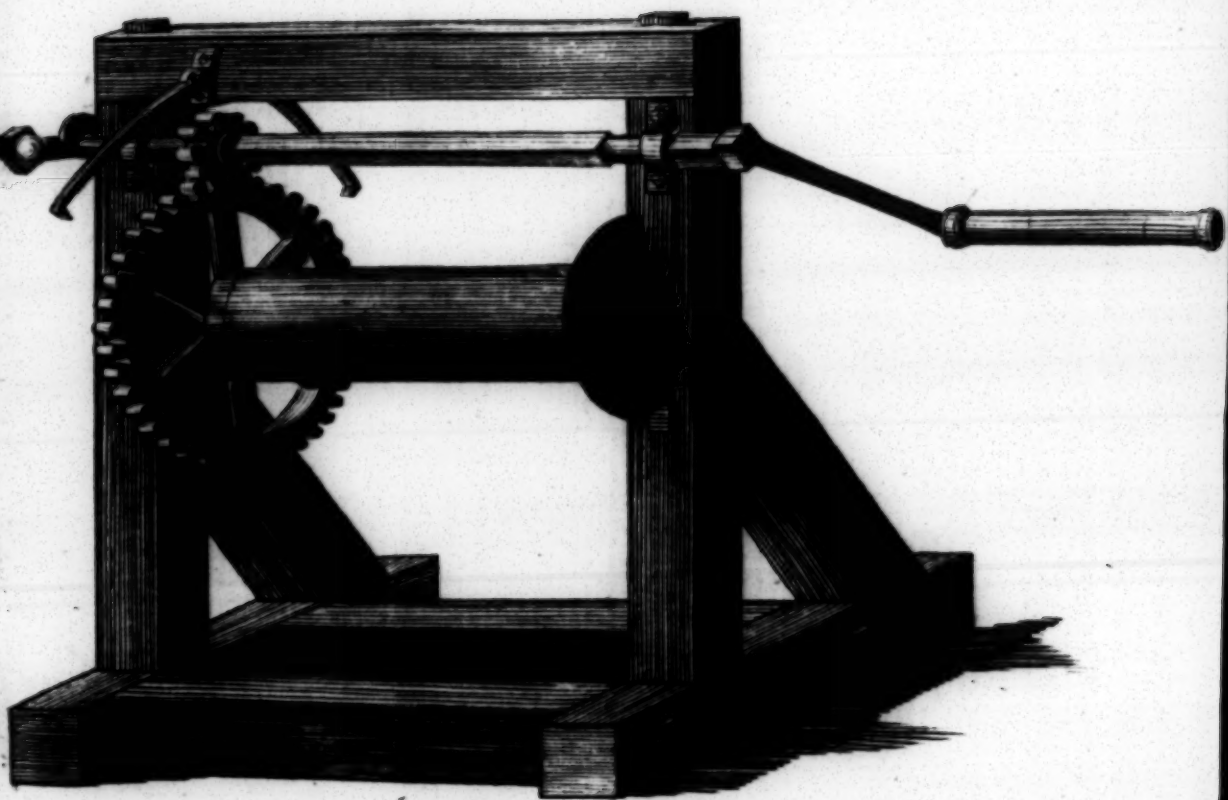
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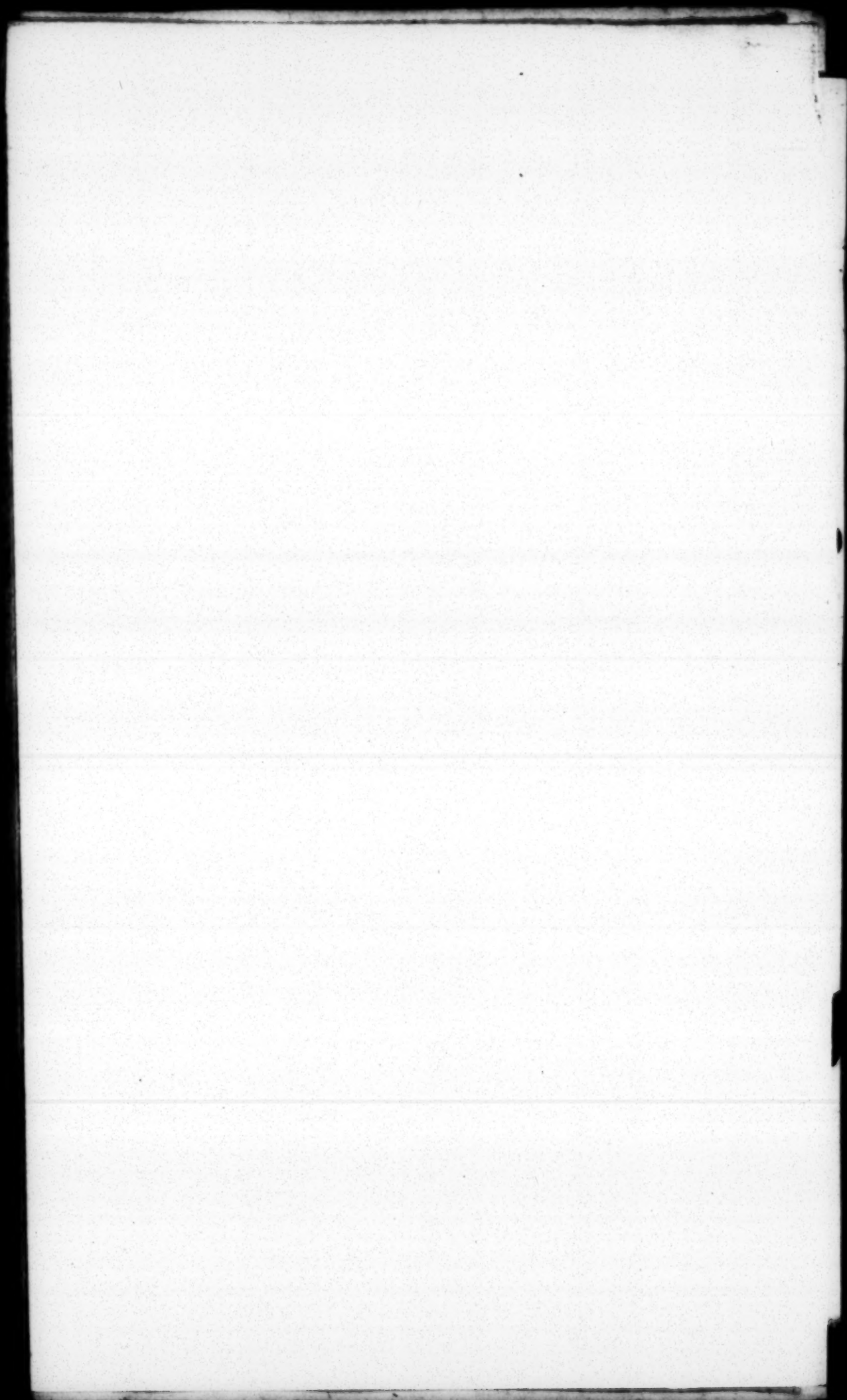




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Miles sculp. Beron





T H E
FARMER'S MAGAZINE.

A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]

American Husbandry.

PERU. IN the year 1525, three adventurers, Francisco Pizarro, Jacobo Almagro, and Ferdinando de Luque, undertook the conquest of Peru, and set sail from Panama in the month of November, with two ships, having on board one hundred and fourteen men. Accordingly, after inconceivable difficulties and distresses, in this first voyage, they sailed as far as where Truxillo was afterwards founded; but then through the impatience of their crew, were obliged to return to Panama; but not before they understood the great wealth of Peru, and obtained several specimens of their woollen cloth, gold, silver, and precious stones. This first expedition was not finished before the end of the year 1527.

Having spent all their fortunes in the first expedition, Pizarro applied to the court of Spain, for fresh powers to proceed; and accordingly he was fitted out with necessaries, and honoured with the title of nobility, and the authority of Lieutenant of Peru, Captain-General and Governor of all those territories he might conquer.

Much about this time Atahualapa, king of Quito, having made war on, and defeated Huascar, the Inca of Peru; Pizarro sent a deputation to Atahualapa, that he was advancing to fight against his enemies, and Atahualapa let him proceed without opposition, hoping to draw him so far into the country, that his retreat would be impossible.

Pizarro also received messengers from Huascar, representing his brother Atahualapa, as the illegitimate son of his father

father, as a rebel, and as a usurper; at the same time praying for the assistance of the Spaniards, with large promises.

Encouraged by this civil dissension, Pizarro pushed on with his small army, fifty-two horsemen, and an hundred and two foot soldiers; and directing his course to Caxamalla, where Atahualapa was encamped with a great body of forces, he gave out that he was an ambassador from a powerful monarch in the east, and came to offer him assistance against his enemies. By this means he was received in a friendly manner by the too credulous Inca, who heaped on him presents and riches in profusion; but Pizarro could not rest till he got the Inca in his power, by making him his prisoner; following the example of Cortez at Mexico. This he soon accomplished, under the venerable cloak of that religion which teaches peace, goodness, and good-will; but not without shedding a torrent of blood, four thousand of the Peruvians being killed on the spot.

Terms were soon offered for his ransom, and a large room twenty-two feet by sixteen, filled with vessels of gold, was to be the exchange. The terms on the side of the Peruvians were fulfilled, and after setting apart one-fifth for the King, and 100,000 pesos for the soldiers of Almagro, there remained 1,538,500 pesos* to Pizarro and his followers; thus dividing the spoils of an innocent people, obtained by injustice, treachery, extortion, and cruelty.

To conclude this black and iniquitous transaction, when Atahualapa demanded his freedom, he was accused of crimes frivolous, and unimportant; or such of which they could take no just cognizance. Pizarro broke through his plighted faith, and resolved to deprive the Prince of his life; urged thereto by the clamours of the soldiers under Almagro, and jealous perhaps of a growing friendship, which the unfortunate Monarch had shewn to his brother Ferdinand Pizarro, and Hernando Soto. He was brought to his trial; Pizarro and Almagro appeared as his judges: The crimes alledged against him were, that being a bastard, he had dispossessed the right heir of the throne, and had usurped the regal power; that he had put his brother Huascar to death;† that he was an idolater; that he had permitted human sacrifices; that he had a number of concubines; that in his imprisonment he had waited and embezzled

* Each peso of as much value as a pound sterling is at this time.

† Huascar had been murdered by order of his brother, who had heard, that the Spanish emissaries were tampering with him for a restoration.

bezzled the regal treasures, which belonged to the conquerors; and that he had excited his subjects to take up arms against the Spaniards. When the wolf is judge, the lamb must to slaughter; under this mock tribunal was the unhappy Prince found guilty, and condemned to die; his sentence was to be burned alive, and an impious father of the church prostituted his sacred function so far as to confirm the decree, and sign the warrant as just. In vain did Atahualpa, by tears, promises, and entreaties, endeavour to prevail on them to send him to Spain, where their own King might be the arbiter of his fate; but all the mitigation of his sentence that could be obtained, was, that on condition he would consent to be baptized, he should not be burned alive, but strangled at the stake, which was accordingly performed.

On the death of the Inca, his son, an inexperienced young man, was set up by Pizarro; while the people of Cuzco, and the adjacent country acknowledged Manco Capac, a brother of Huascar; but the violent convulsions into which the empire had been thrown by the civil war, and the invasion of the Spaniards, had deranged the Peruvian government, dissolved its frame, and rendered it in course of time, an easy prey to the concourse of Spaniards, who flocked thither on hearing of Pizarro's success, and the abundant riches of Peru.

Peru is situated between the sixtieth and seventieth degrees of west longitude; and between the equator and twenty-fifth degree of south latitude; being five hundred miles in breadth, and two thousand in length. It is bounded by Terra Firma on the north; by the Cordilleros on the east; by Chili on the south; and by the Pacific Ocean on the west.

DIVISIONS.

The north division,
The middle division,
The south division,

PROVINCES.

Quito,
Lima, or Los Reyes,
Los Charcos.

From the situation of this country, which is within the Torrid Zone, it is natural to conclude it almost uninhabitable; but the Cordilleros being on one side, and the South-sea on the other, it is not so prodigiously hot, as tropical countries in general are; and in some parts the cold is even painful. Ulloa observes, with regard to the province of Quito, that the method taken by nature to render this country a delightful habitation, consists in an assemblage of circumstances, of which, if any were wanting, it would either be utterly uninhabitable, or subject to the greatest inconveniences. But by this extraordinary

ordinary assemblage, the effects of the rays of the sun are averted, and the heat of that glorious planet moderated. The principal circumstance in this assemblage is its elevated situation above the surface of the sea, or rather of the whole earth; and thus not only the reflection of the heat is diminished, but by the elevation of this country, the winds are more subtile, congelation more natural, and the heat abated. These are such effects as must doubtless be attributed to its situation, and as the only circumstance from whence such prodigies in nature as are observed here can proceed. In one part are mountains of a stupendous height and magnitude, having their summits covered with snow; on the other, volcanos flaming within, while their summits, chasms, and apertures are involved in ice. The plains are temperate, the breaches and valleys hot; and lastly, according to the disposition of the country, its high or low situation, we find all the variety of gradations of temperature possible to be conceived between the two extremes of heat and cold. It is remarkable, that in some places it never rains, which defect is supplied by a dew that falls every night, and refreshes the vegetable creation sufficiently.

[To be continued.]

ART. II. *Mode of Farming for several Years.*

[Continued from Page 407. VOL II.]

THE very great expence I had hitherto been at, was but the prelude of what was to come; but I had now some prospect of advantage. With all expedition, as fast as I got off my vetches, I fallowed my land, and as soon as the whole field was cleared, I had it stirred, and (the more early crops were twice stirred) properly dragged, rolled, and harrowed. It was now ploughed and landed up; but wherever this was insufficient, another ploughing was given; thus, three, four, and five good ploughings were given to the vetch stubble, before I sowed my wheat; which at last I did, field after field, as each separate field was ready for the seed. I began about the first of October, and finished about the first of December. The French wheat stubble was ordered in the same manner, having indeed only three ploughings; the fallow was sown the first week in October, and in a tolerable season: Thus, I had sown thirty-three acres of wheat after vetches, ten after French wheat, and six after fallow, in all forty-nine acres of wheat; a very large crop indeed, for a farm of no greater size than mine,

mine, but I had laid down a plan to pursue; at the same time I meant not to injure my land, I meant that the land should not injure me.

I fed off my turnips with fat sheep, which I bought at Wey hill fair; some cost me 22s. 6d. each, and I sold them out to the butcher at 26s.; others I bought for 14s. 6d. and sold for 17s. On the whole the profit on the sheep after deducting for the expences, was not worth mentioning; but if they do not pay with their heads, they do by their tails, which the succeeding crops convinced me of. I ploughed No. 2, and No. 13, thrice, and sowed with barley and clover.

After the beans were off No. 7, I fallowed it down, and sowed it with winter vetches, which came up tolerably well; but having now plenty of clover, I did not try for summer vetches; the vetches were either cut up for my horses, pigs, &c. or else made into hay. Then I began to plough up the ground, and well tear it to pieces, at every opportunity moving it well, and cleaning it of all its rubbish; which I got well finished time enough to throw in some wheat in a very good season afterwards.

The state of the crops will appear then as follows:

1772. No. 1. Wheat, at four ploughings,
2. Barley, at three ditto,
3. Clover after Barley,
4. Wheat, at six ploughings,
5. Turnips, at six ditto,
6. Wheat, at three ditto,
7. Winter Vetches, at one ploughing,
8. Turnips, at six ditto,
9. Clover, after Turnips,
10. Wheat, at five ploughings,
11. Wheat, at four ditto,
12. Wheat at three ditto,
13. Barley and Clover.

At all the leisure time I had, I continued to fetch in chalk and dung, and by the winter of 1772, I had collected 120 loads of chalk, and 250 loads of dung, which being taken from inn stables, I distributed in mines with ditch earth, my own dung, turf-ashes, &c. making in the whole, when well mixed by turning, &c. a very noble and pleasing appearance, being drawn into the fields where I intended to lay it on in the winter of 1772. It is to be observed, that for the chalk my land-

lord allowed me two shillings for each load laid on the land, an encouragement that every good landlord will find it his advantage to give his tenant, or in such a proportion. It was always supposed among us, that a load of chalk was worth eight shillings fetching, the landlord defraying one fourth part of that expence, will naturally incite every Farmer to chalk his land;—I have heard a great deal, Mr. Sylvan, of lime, and lime salts, chemical manures, composts of oleaginous, saponaceous particles, and a farrago of words, imposed upon us Farmers; but I believe nothing is equal to good tillage, good stable dung, proper rest, and a good dressing of chalk once in twenty years; these will be sure to bring a great deal of profit to the Farmer, and a just system of œconomy must teach the Farmer to preserve that profit.

Ashes are said to be a very good dressing for clover; I answer, stable dung is a great deal better; but it is a maxim with me, that a Farmer should pawn his coat to dress his clover; where stable dung cannot be had, such other dressing must be used as can be; I have used almost all kinds of dressing for clover, from lime-kiln wood ashes, to drift sand, and they all produced a crop of clover; but where stable dung is used, we obtain not only a great crop of clover, but also wheat in proportion; the ground is enriched by it, and you may obtain a succeeding crop of turnips, and barley, without any other dressing than the sheep, till the clover is to be dressed again. I hold it a wrong maxim in general, to dung for wheat, barley, &c. but hold it proper, nay, almost indispensably necessary to dung the previous crops.

From the crops of 1772, I obtained a produce as follows:

Forty-nine acres of wheat, 115 quarters, two bushels.

Twenty-three acres of barley, 103 quarters.

Eight acres of clover, mowed twice, 24 loads.

Sixteen acres, mowed once, 30 loads.

Both fields of clover were well dressed with a mixture of dung, earth, and ashes; allowing as much dung as I could, laid on in the months of December, January, and February.

C. WILLIAMSON,

[To be continued.]

ART.

ART. III. *Is the custom of setting Wheat in Norfolk general?*

Mr. SYLVAN,

AS it yet a very busy time with us, I hope you will accept of that, as an excuse for my not writing sooner. Farmers are people that have very little leisure for the pen; therefore, though you may be assured of always having all the questions you are pleased to ask me, answered; it cannot often be directly. To begin, your first question is, whether it is the general custom with us to set wheat? Indeed, sir, it is not. I believe, where there is one acre set, thirty are sown; nor is it likely it will ever become a general custom, for two reasons: First, because even where plenty of help can be got, it is not possible to set one acre and a half in the time that two might be sown. Secondly, many Farms are so lonely situated, that a sufficient number of setters could not possibly be procured. In short, the broad-cast method has too many advantages ever to be laid aside; not that I wholly disapprove of setting; a piece of clover or any other kind of grass land that has laid two or three years, it is certainly better to set than to sow, on account of the flag, (especially if wheat is dear.) A piece of this kind I tried last year; it was strong land, naturally good, and had ten loads an acre of rich rick-yard dung laid on it the first winter after it was laid up; it lay two summers, and was cut twice each year, it was broke up and set upon the flag with wheat in the beginning of October; the expence of the setters was half-a-guinea an acre, which with us is the usual price. Three ploughs could not plough above an acre and a half in a day, (because they must not go faster than the setters) which, if it had been sown might have ploughed two and a half at least; as not above a bushel an acre is ever set; I saved half the expence of seed, nay, indeed, something more, as I believe I should not have sown less than ten pecks. My estimation of the loss and gain stands as follows:

	£.	s.	d.
Expences of setting six acres,	3	3	0
Milling an acre each day in ploughing four days,	1	0	0
Total loss,	4	3	0
Saved in corn, (wheat being six shillings a bushel) nine bushels,	2	14	0
Overplus expence,	1	9	0
B 2			Or

Or four shillings and ten-pence an acre. I however only reckon the loss of time, as the losing an acre plowing each day, the value of which I count five shillings, the price of ploughing with us; whereas, it may prove three times that loss, if a Farmer has a great deal of wheat to sow, and the weather fickle.

To conclude my story, my crop proved a good one, four quarters an acre, (or eight coomb, as we reckon in Norfolk) and of an exceeding good quality, but I have had as much when the same land has been sown. I believe many people boast of their set crops, without thinking that good land, well manured, will generally bear a good crop; and it is usual for a Farmer to choose his best land, and to take the most pains even with that to try experiments upon.

Thus, sir, I have given you my opinion, supported by facts, with regard to wheat setting; and you may be certain of my taking the earliest opportunity of answering your other Questions.

Till then I remain, sir, your well-wishing friend,
H—, near Norwich. ARCUS.

[This letter was in consequence of what has been said on setting of wheat. The Editor wrote a private letter to Arcus, and among others, the above question was put.]

ART. IV. *A Dissertation on Marle.*

Mr. SYLVAN,

THE following remarks deserving the notice of Farmers, and not being in general known; I beg you to insert them in your Magazine, and you will oblige,

A MEMBER of the SOCIETY of Arts,
Manufactures, and Commerce.

It is taken out of the bowels of the earth at several depths, is of divers colours as after-named, and some sorts have often two or three colours intermixed. It is unctuous, of a slippery nature, and in goodness pure; soon relents after rain, and, when dry, slackens like lime, and at last dissolves into the finest powder.

In order to discover marle, the best way is to use the auger, and observe the strata taken up from time to time by it.

I have found, after I have got through the surface, which is about a spade and half deep, that the next earth was a very strong,

strong, coarse, bed of clay, five or six feet deep; afterwards, getting through it, the auger brought up marle, viz. that which appears of a fine light-brown colour, and some of it mixed with blue veins, (which I will here call pigeon marle, by way of distinction :) Here was a bed of this pigeon marle of five or six feet deep, and after that followed another kind of marle, which I will call toad marle, by way of distinction; this is heavier, and without any veins of blue.

When either of these marles are dug out of the pit, the spade cuts them like so much soap; and the last-named marle looks very blackish and dark, and may be, and I believe is, in some countries, called toad marle, from its resemblance in colour to that animal; but this marle being exposed to the air, alters in colour very much. This appears to me to be the strongest marle.

Marle may be discovered sometimes near the surface, by carefully observing the ditches and fences of your land.

It is frequently found near rivers, or brooks, and sometimes may be discovered on the banks of such waters.

To know when you have found true Marle, try it by Air, Fire, and Water, or Vinegar.

First, By exposing a large lump of three or four pounds in the air, which, if true marle, will, in a little time, by the nitre, dews, &c. break into small parts; and there will be an hoary, or white congelation on that part of it which is exposed to the sun.

Secondly, When your marle is dry, break it into small particles, and put an handful into an hot coal fire, and it will crackle as if so much salt had been put therein.

Thirdly, Place a piece of the dried marle in a glass, and thereon gently pour as much water as will cover it. If true marle, it will then gradually moulder, and dissolve into a liquid soap. Let not the glass be shaken, that you may observe the ebullition (which is material) or you may, in like manner, try it with vinegar, where the effervescence, or struggling, will be much stronger than in water.

The Virtues of Marle.

It is the best manure for sandy, dry, gravelly, or light lands of any kind. It is excellent for mossy lands. It is, indeed, good for all other lands, of what nature soever, even clay,* provided

* We should be very much obliged to our correspondent if he would inform us what precautions are to be used in marling clay, which kind of

provided care be taken in laying on a proper quantity, and that the same be well dissolved.

Care must be taken in the quantity used; if too little, you may easily add; but if too much is laid on the land, you cannot take it away.

It is used in some countries for arable lands only; yet it is as good for grass or pasture lands, but does not, the first, and seldom till the second year, shew forth its utility; and then you will observe the grass to shoot out a dark, or blackish colour, which afterwards turns to the finest green; and with it come up quantities of white clover grass, which hath occasioned me some difficulty with the Farmers to convince them I had not sown the clover-seed.

If lands are properly marled, they will continue good for twelve or fourteen years for the plough; and for pasture, or grass lands much longer.

I would recommend that the plough be not suffered to enter into the land till the marle is thoroughly dissolved.

Fish thrive prodigiously, and grow fatter in marle pits than any other ponds.

Quantities to be used.

A great difficulty this, to ascertain the quantity.

In some countries they will tell you of laying three hundred loads to an acre, others more, others less; but they nowhere ascertain what is a load. In Cheshire and Lancashire their loads are scarcely six bushels, and they use a small cart made for the purpose, drawn by two or three small horses.

If the land is gravelly, sandy, or light, let as much be laid on it as will make a good thick coat to bind and stiffen the soil.

But let the land be what it will, so much should, in all events, be laid on as will make a thin coat over the entire surface.

Upon my lands, which are grass and pasture, of a tolerable mould, on a clayey soil, and which were left about eight years since, in a bad plight, by the late tenant, I first attempted to lay ten loads to every acre, (by a load, I mean as much as three large, well-fed, strong horses could draw) but found it was too little, and would not meet in the spreading.

I immediately doubled the quantity, and two years afterwards I added another coat of fifteen loads more to every acre, and

of marle is best suited to it, and in what quantities it should be laid on. Our principal reason for giving him this trouble is, because many farmers are of opinion, governed by an old prejudice, that marle is by no means a proper manure for clay.

and find it answers very well for hay and pasture. I need not say horses and cows are fonder of this hay and grass than of that wherein the dung may be tasted and smelt.

A work of this kind should be set about by the end of August, or beginning of September; and the loads should be shot into small heaps, as the Middlesex Farmers shoot their dung, viz. two or three bushels in each heap; and a man must be ready to separate it, that the nitre, air, dews, and rain, coming on the large pieces, may act, and cause them to break, as of themselves, into smaller parts.

After the marle has lain upon the ground, and you see that the air, nitre, &c. have loosened the great lumps, and they are ready, on a slight touch, to fall into pieces, a person should be ordered (when the weather and marle are quite dry) to break and spread the pieces to compleat your coat; and you should avoid, as much as possible, leaving any large pieces to lie and dissolve without being spread on the surface, but cause them to unite therewith.

In the beginning of February, and in dry weather, I cause an old gate well bushed, and a heavy weight laid on it, to be drawn by one horse over the whole field, in order that every part may have its due proportion.

If you intend to plough your lands, the preceding cautions are not so necessary, as the plough and harrows will spread and intermix the marle with the soil sufficiently; but if you use the drill-plough, the above hints may be useful.

It would take a volume to give an exact and full history of marle, its virtues, and uses, and to shew that it was used by the Romans, and many years discontinued, and especially till the houses of York and Lancaster were united, and then revived in some few counties; and the great benefits received by marling in Suffolk and Norfolk within a few years past.

There are variety of colours in marle, viz. blue, white, yellow, red, and other colours, which make no material difference, provided they be earthy and fat, or slippery as soap, and as free as possible from a mixture of sand, gravel, or stone.

I have often chewed marle, but never yet could distinguish any other than an earthy taste in it, and apprehend it similar to the best water, and the best of oils, which have no taste; but when the marle is dissolved in water, and you spread or rub it on your hand, it has a very strong, earthy smell.

I cannot conclude without a necessary quotation from Lord Bacon, and shall leave the reader to make his own comments and observations thereon, viz. His Lordship, in his account
of

of natural improvements by mixtures of earth with earth rather than dungs, recounts marle among others, and gives it the pre-eminence as the most pinguid, rich, and least overheating.

ART. V. *On Feeding Pigs on Clover.*

MR. SYLVAN,

I Wonder none of your correspondents have intimated the utility of feeding pigs on clover; it has been a custom of mine for some years past, as soon as I have got in my first crop of clover, or within a few days, to turn my sows and pigs, store pigs, &c. into a field from whence the clover has been carried; the advantage I mean and obtain from this practice is, a great flow of milk to the sows, and good substantial food to my growing pigs, and a full equivalent in value to a crop of latter clover; the store pigs come out at a proper time for fattening, and what they have there gained, though not substantial fleshy fat, is yet of such a kind as to hasten their fattening very much.

T. L.

ART. VI. *On encouraging Industry among the Poor, in a letter to the Secretary of the Bath Agriculture Society from a Gentleman at Sherborne.*

S I R,

I Will not tell you (because I cannot) what I feel as a man and a christian for the industrious poor, on account of the treatment they too frequently receive from those above them in condition; and I make no doubt, but you will employ your thoughts to promote some benefit to them from the Society.

It has been observed, that the rewarding industry and frugality among them by premiums or bounties, is attended with much difficulty: I grant it; but I still think it an object to which the wisdom of the Society is fully adequate; and hope it will be attended to.

I have inclosed some thoughts on giving encouragement to the industrious poor, which I wish you to communicate to the Society. It were much to be wished, that mankind would exert their faculties in forwarding improvements, and the extending of happiness rather than merely treading in the very footsteps

footsteps of those who have gone before; but mankind are so much more inclined to follow than to proceed; that they seem hitherto to have sunk, through luxury and dissipation, and the revolution of things, into barbarism again, without ever reaching that high improvement or extension of happiness, which the good Father of the Universe gave them power to reach, and to which they may perhaps, at some future period, attain.

Our provincial Societies hitherto, as far as I have heard of them, seem to be little more than transcripts of the Society in the metropolis, to which I was a very early subscriber.

The profits of Agriculture at large have been so increased, and the knowledge of it so generally extended, since the institution of that Society, that perhaps it does not now stand so much in need of encouragement as at that time.

We have sought and found out an increase of food for our cattle, but this has not rendered their flesh cheaper to the poor. Is it possible to find out an increase of food that our poor may attain to? This would be a valuable discovery.

The cultivation of Potatoes has been perhaps the most beneficial object, because the most universal, that our late improvements have attained. Had it not been for this root, it may be questioned whether the poor could have subsisted since the price of bread, cheese, &c. has been so much enhanced. Is there no manufacture to be found out and encouraged that might employ the aged, infirm, and children? The making of what are called Dutch toys employ vast numbers in Germany; if any probable scheme for giving encouragement to the industrious poor, in old age especially, should be fixed on, I should not think it the worst spent money to subscribe five or six guineas, and an annual subscription of one or two guineas, to that purpose. And it seems to me, that if the giving encouragement to the industrious poor was made a distinct object, numbers would subscribe to it, who would not have a notion of subscribing to the plan at large.

[*To the Secretary of the Bath Agriculture Society.*]

R. G.

ART. VII. *Method of preparing a rich Compost.*

[From Dr. HUNTER's *Georgical Essays.*]

TAKE a sufficient quantity of saw-dust, incorporate it with the blood and offal of a slaughter-house, putting a layer of one and a layer of the other, till the whole becomes a moist and fœtid composition. Two loads of this compost,

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mixed

mixed with three loads of earth, will be sufficient for an acre of wheat or spring corn. Being a kind of a top-dressing, it should be put on at the time of sowing, and harrowed in with the grain.

It will be necessary to remark, that this species of manure seems best adapted to lands of an open texture. Tough clays require lime and plenty of dung, to break the cohesion of their parts. Farmers should attend to this distinction.

The present year I have a field of wheat manured in this manner, and have the pleasure to find that it is extremely clean, and is likely to prove an excellent crop. As this kind of compost lies in a small compass, it seems well adapted to the use of such Farmers as are obliged to bring their manures from a distance. It is, besides, extremely rich, and will probably continue in the land much longer than yard or stable-dung. I apprehend that it is capable of restoring worn-out land to its original freshness; and I am induced to be of this opinion, from the appearance of the above-mentioned wheat crop, which is now growing upon land much impoverished by bad management.

All animal substances being of the same nature, it is very probable, that the refuse whale fat after the oil is boiled out, will make a compost of equal goodness with the above. I have at present a dung-hill made of that offal and horse-dung hot from the stable. I prefer the foregoing on account of its reducing the blubber more speedily into a putrid state. The preparers of train oil constantly throw the offal into the sea; but I apprehend, that saving it for the purposes of vegetation would be a national advantage. Being an animal substance, there is no doubt of its containing all the principles of other animal bodies; consequently it must be an object worthy the attention of such gentlemen as live in a neighbourhood where train oil is prepared. We cannot recommend, in too forcible a manner, a proper attention to every substance that is capable of being brought into a state of putrefaction. Manures properly managed are the life and soul of husbandry.

Few things however, in the extensive field of rural œconomy, are so imperfectly understood. Until the doctrine of manures is clearly and distinctly laid down, agriculture will remain a vague and uncertain study.

ART. VIII. *Caution respecting the Management of Lambs in Snowy Weather.*

I Have often heard it said, that we should profit by our misfortunes; this I have frequently done, particularly on the occasion I am about to mention.

I am but a young Farmer, and, of course, have been, by my inexperience, led into many mistakes. A few years ago, I bought five-score lambs with an intent to keep them for store sheep. I turned them on my lands, where they did very well till the weather happened to be snowy.

As soon as snow had covered the ground, I began to be alarmed lest my lambs should be starved, and accordingly ordered one of my men to carry some sweet hay, and lay it in different parts of the field for them to eat; but in this I did very wrong, for the snow was not yet so deep, but that the lambs could by scraping with their feet, clear it away, and get at a little grass. This made them refuse the hay, to which they took a distaste; and as more snow afterwards fell, I lost that year no less than thirty-eight lambs by downright hunger, and the rest were with great difficulty saved; for I was obliged to try many methods of teaching them to eat the hay.

I drew a little twisted hay a-cross their mouths; but this, though a common method, had very little effect. I then rubbed some hay till it was soft and silky, putting it into their mouths, and holding them shut; this, indeed, taught a few to eat, but not many. At last I was obliged to buy half a score old sheep, for which I paid a good price, and turn them in amongst my lambs. As the sheep eat the hay fast enough, the lambs soon followed the example; and by this means I saved above half my stock.

My over caution was the occasion of my loss; for, had I left the lambs, without giving them any hay till the snow had been deep, and they had been pinched with hunger, they would have taken readily enough to eating of hay.

As my loss was considerable, it dwelt on my memory, and I took care never to make the like mistake again; in consequence of which care I have always, of late years, met with great success in the lambs I have since bought.

I am sensible, that many of your readers will think that I might as well have saved myself the trouble of writing, as to have sent you a matter of such small consequence; but I hope, you will

be quite of a different opinion, as you cannot but be sensible, that by inserting such cautions in your useful work, you will do infinite service to young Farmers. A. B.

ART. IX. *An experienced Method of recovering Fruits, Potatoes, and other Roots that have been frosted.*

THIS may easily be done by putting such fruits and roots, as pears, apples, potatoes, &c. as have been penetrated by the frost, into cold water, when a thaw approaches, and letting them remain in the water some time, till by the plumpness and fairness of the fruits and roots, it appears that the particles of the frost are extracted. This method has been actually tried and found to answer; but at the same time, the utmost care should be taken to preserve these things from the frost, as it is better to keep off an enemy, than be at the trouble of driving him out.

ART. X. *Arithmetical Question to Young Farmers.*

Mr. SYLVAN,

THERE is a short method of computation (known to most country Farmers and dealers) from having the price of one pound of any commodity given, to find the price of the the Great Hundred; which is this, twice so many shillings, added to once so many groats as the commodity is farthings per pound, gives the price of the Great Hundred in shillings.—Required, To find the price of one pound, from having the price of the Great Hundred given, by a similar method; together with the investigation, and a practical rule from thence deduced.

I am, your constant reader,

PETHERTONIENSIS.

ART. XI. *Benefit of Lime as a Top-Dressing for Wheat.*

Mr. SYLVAN,

I HAVE, for some years last past, held a considerable farm in the county of Leicester, and have, thank GOD! met with some success in my practice.

My methods of farming are thought by many to have something peculiar in them; yet, as I do not often miscarry, no one has a right to find fault with me.

Great

Great part of my farm is very good wheat land, the soil being a substantial loam.

I frequently, as well as the rest of my neighbours, make use of lime as a manure; but then I use it differently from what they do.

The common practice is, to lay about forty bushels of unslaked lime on an acre, which makes a peck on every square perch, (half a bushel when it is slaked;) on wheat land they spread the lime at the same time they sow the seed; but this is a way I do not much approve, and for this reason I vary my practice. The method I use is as follows: I sow my wheat without laying on any manure; but in the beginning of the month of February, I get, for every acre of land I intend to lime, twenty bushels of that manure, unslaked, and forty bushels of sand, or the rubbish of a brick-kiln.

Towards the latter end of the month I cause the lime to be slaked, which doubles its measure, and very well mixed with the sand; immediately after which, in the last week of the month, I have it scattered by way of top-dressing over the green wheat; and as rain generally succeeds, it is soon washed down to the roots of the plants, and gives them a vigour and strength of growth, that is really astonishing to a person who had never seen this method practised.

This is my way, if I see the weather is inclinable to be wet; but if it is dry, and not likely to rain, I double the quantity of sand, in order to take away all danger of the wheat-plants being burnt, or hurt, by the strongly corrosive power of the lime.

The above method I would willingly recommend to the attention of your readers; and though I have benefited greatly by it, yet need they not take my word, as it is so very easy to make a small trial, and form a judgment from the success they may have.

I must observe, that I look upon it to be almost a matter of indifference what kind of sand I use, except that I prefer lime-stone sand to the chrystal sand, as being most absorbent, and in truth prefer the rubbish of broken bricks to either.

It will perhaps be unnecessary to tell your readers my motive for this preference; yet that I may not be thought obscure, I shall do it.

When lime is slaked, it crumbles and falls into very minute particles; the smallest of these particles are, together with the moisture that adheres to them, absorbed by the large open pores of the brick rubbish, which afterwards dispenses them by slow degrees

degrees to the soil on which it is laid, for the support of the crop; this occasions the operation of the lime to be more equal; the parts which were not absorbed, are first attracted by the earth; these nourish the young plants, which, in time growing stronger, have power to draw from the absorbent, the particles it had reserved for their use.

This may be called refining on agriculture, but I know it has its use.

I am, your humble servant,

L. O.

ART. XII. *A Receipt for the Jaundice.*

TAKE the large leaves that grow upon the stem, or stalk, of the artichoke, a sufficient quantity; pour upon them one quart of boiling water, and, when cold, strain it off for use; take of this, and the like infusion, a quarter of a pint every morning fasting; likewise at going to bed, until cured, which probably will be in a few days.

ART. XIII. The HOUSEKEEPER'S DIRECTORY.

[Continued from Page 420. Vol. II.]

Syrup of Violets.

TAKE of the fresh picked flowers of violets a pound, Florentine orrice-root half an ounce, boiling distilled common water, two pints and a half; let them stand in infusion with a gentle heat, in a closed glass vessel for a day; then press out the liquor, in a quart of which dissolve four pounds of sugar; take off the scum as it rises, and make a syrup.

Syrup of Clove July-Flowers.

Take of fresh-gathered red clove July-flowers, clipped clean from their white heels sixteen ounces, cloves two scruples, boiling spring-water one quart; let them steep together in an mild heat for a night; then strain off the liquor, and add thereto three pounds of white sugar, boiled up to the consistence of lozenges; dissolve it in a bath heat, and make the whole into a syrup, without boiling, according to the rules of art. This is a cordial.

Syrup

A Balsamic Syrup for Coughs, &c.

Take of balsam of Tolu six drams, spring water twelve ounces; boil them together, without taking off the scum that rises, to twelve ounces; then with twenty-one ounces of the best refined sugar, make it into a syrup without further boiling, and when it is grown cold, strain it off.

Syrup of Marsh-mallows.

Take of the fresh roots of marsh-mallows two ounces, those of parsley an ounce, liquorice-root, the tops of marsh-mallows and mallows, figs, each half an ounce, stoned raisins two ounces, sweet almonds blanched an ounce; let all these steep together for a day, in three quarts of clear barley water; then boil it to two quarts; after which press out the decoction, and in the liquor, grown fine by standing, dissolve gum-arabic an ounce, fine sugar four pounds, and make a syrup thereof with the requisite art.

To make Dr. Stevens's Water, &c.

Take cinnamon, ginger, nutmegs, grains of paradise, cloves, aniseeds, fennel-seeds, carraway-seeds, each two drams; sage, chamomile, marjoram, lavender, each a small handful; mint, red roses, pellitory of the wall, rosemary, thyme, and wild thyme, each a small handful; break the spices fine, bruise the herbs small, and put them to a gallon of Bourdeaux red wine, and let them stand twenty-four hours, stirring them often; then distil in an alembic, and keep the first water by itself, the second water is good, but not equal to the first; it comforts the spirits and the stomach. With this water, the old Doctor preserved his life for five years, when it was not thought he could live one by all the Physicians.

Dr. Butler's Treacle Water.

Take hartshorn shavings one ounce, boil in three pints of water to a quart, then take roots of elecampane, gentian, cypress, and tormentil, each one ounce; carduus benedictus, angelica, each one ounce; borage, bugloss, rosemary, and marygold flowers, each two ounces; citron-peel one ounce; cowslip flowers, clove July flowers, lavender tops, marjoram tops, each two ounces, Venice treacle one pound, dissolved in six pints of sack, and three quarts of rose-water, infuse twenty-four hours and distil; the first quart is for grown persons, the remainder for children.

[To be continued.]

ART.

ART. XIV. *Method of destroying great Numbers of Rats in a short Time.*

THE London Society for encouraging Arts, &c. proposed some time ago, a premium of Fifty Pounds, for a preparation for taking rats alive. This may at first seem a trivial, perhaps even somewhat drole affair, for that Society to trouble themselves with; but when we consider that the loss to the public, by the destruction of corn alone, amounts to some hundred thousand pounds a year; besides that of many other commodities, subject to be devoured, or damaged by them; and the very disagreeable domestic annoyance of these noxious creatures where they abound, it will appear a matter of serious moment.

It was represented to the Society, that professed rat-catchers have a secret for preparing some composition which will allure all the rats in or about any building together in one place; and intoxicate or fascinate them so, that they may be taken by the rat-catchers at pleasure; it was therefore concluded, that, if this secret was laid open, any person might easily practise it, without employing professed rat-catchers.

In consequence of advertising this premium several candidates offered themselves; but it appeared, that instead of a preparation, (that is, some composition which would allure, fascinate, or intoxicate the rats, so that they might be easily taken) they had only set traps, or machines of various forms and constructions.

As those who practise rat-catching for a livelihood are not many in number, nor always at hand, I shall give some hints of the principal means by which, in three or four days time, or sometimes less, they can clear a house, and even the out-buildings, of the greatest part of the rats frequenting it.

The first step taken is, to allure the rats altogether to one proper place, before they attempt to destroy them; for there is such an instinctive caution in these animals, accompanied with a surprizing sagacity in discovering any cause of danger, that if any of them be hurt, or pursued in an unusual manner, the rest take the alarm, and become so shy and wary, that they elude all the devices and stratagems of their pursuers for some time after. This place, where the rats are to be assembled, should be some closet or small room, into which all the openings but one or two may be secured; and this place should be, as near as may be, in the middle of the house or building.

The means used to allure them to one place are various; one of those most easily and efficaciously practised is, the trailing

ing some pieces of the most favourite food; which should be of the kind that has the strongest scent, such as toasted cheese, or broiled red-herring, from the holes or entrances of the closet to their recesses in every part of the house, or contiguous buildings. At the extremities, and in different parts of the course of this trailed track, small quantities of meal, or any other kind of their food, should be laid, to bring the greater number into the tracks, and to encourage them to pursue it to the place where they are intended to be taken; at that place, when time admits of it, a more plentiful repast is laid for them, and the trailing repeated for two or three nights.

Besides this trailing, and way-baiting, some of the most expert of the rat-catchers have a shorter, and perhaps more effectual method of bringing them together; which is calling them by a kind of whistling noise that resembles their own call; and by this means, with the assistance of the way-baits, they call them out of their holes, and lead them to the place designed for taking them. But this I apprehend much more difficult than the art of trailing.

In practising either of these methods, of trailing or calling, great caution must be used to prevent the scent of the feet and body from being perceived; which is done by overpowering that scent by those of a stronger nature. In order to this, the feet are to be covered with cloths rubbed over with assafoetida, or other strong smelling substances; and even oil of rhodium is sometimes used for this purpose. If care be not taken to prevent the scent of the operator's feet, the attempt to catch will probably be unsuccessful. Oil of rhodium has a very strong fascinating power over these animals, and if a small quantity is exhaled in the place where the rats are intended to be taken, will draw them together in a very short time.

It is usual likewise for the operator to disguise his figure as well as scent, and to avoid all motion till he has secured his point of having all the rats in his power.

The means of taking them, when they are brought together, are various. Some entice them into a very large bag, the mouth of which is sufficiently capacious to cover nearly the whole floor of the place where they are collected; which is done by smearing some vessel, placed in the middle of the bag, with oil of rhodium, and laying in the bag baits of food. This bag, which before lay flat on the ground with the mouth spread open, is to be suddenly closed when the rats are all in. Others drive, or fright them, by slight noises or motions, into a bag of a long form, the mouth of which, after all the rats are

are come in, is drawn up where they entered, all other ways of retreat being secured. Others again intoxicate or poison them, by mixing with the repast prepared for them, the *coculus Indicus*, or the *nux vomica*. I have seen a receipt for this purpose, which directed four ounces of the *coculus Indicus* with twelve ounces of oatmeal, and two ounces of treacle or honey, made into a moist paste with strong beer; but if the *nux vomica* be used, a much less proportion will serve than is here given of the *coculus*. When the rats appear to be thoroughly intoxicated with the *coculus*, or sick with the *nux vomica*, they may be taken with the hand, and put into a bag or cage, the door of the place being first drawn to, lest those who have strength and sense remaining escape.

By these methods, well conducted, a very great part of the rats in any farm, or other house, and the contiguous building, may be taken. But it requires experience and observation to perform them well; and there may be circumstances known to the most skillful of the rat-catchers, which if intelligibly communicated, though they would not enable a person without practice to manage this affair completely, would yet greatly assist, and render it more easy to be attained.

ART. XV. *On the Culture of Carrots, by a Farmer.*

THE use of carrots, for the winter feed of cattle, has been long known and practised in the eastern parts of Suffolk, where it is common to make carrots serve the same purpose turnips have many years done in most parts of the county of Norfolk, besides that many, I am informed, are sent from thence to the London markets; but carrots never have been sown in the latter county, for the maintenance of cattle, to my knowledge, until I tried a small parcel in the year 1769.

I thought it prudent to make those trials, before I became a candidate for the generous premium offered by the Society; the hopes of deserving which, encouraged me to venture a pretty large and unusual expence, as well as the loss of a great part of my winter crop, and which has thus become the means of making known, in this part of the country, a species of husbandry with which we had before no acquaintance but by hearsay, being above fifty miles from the country where it had before prevailed.

In the year 1763, I sowed thirty acres and an half by mensuration, as nearly as I could judge, most of it having been actually surveyed; but the survey including hedges and ditches, whereas

whereas I speak of manurable land only, and the boundaries of the pieces being not exactly the same as those surveyed, I was obliged, by the assistance of the gentleman who looked over the land with me, and signed my certificate, to adjust the exact quantity, with the help of a little conjecture.

This quantity of land lying in three parcels, one, of thirteen acres, bore wheat in the year 1762; one, of half an acre only, had borne clover; and the last, of seventeen acres, turnips that year. The piece of thirteen acres is a cold loamy soil, shallow, and upon a sort of loamy gravel: The half acre is a soil much mixed, upon a moist clay. The seventeen acres may be divided into two parts, the one of fourteen acres, and the other of three. Both are a light and dry soil, newly improved with a marle; the former an exceeding good tempered soil, upon a marle; the other a shallow black sand, upon a kind of imperfect grit stones, called by us a carr stone.

Before I give an account of the success of my crop of carrots, and of the use I made of them in feeding cattle, I think it may not be improper to say something on the manner in which I cultivated these several pieces of land, which I founded as well upon the best information I was able to procure, as upon the observation afforded me by my own experience of the former year.

The wheat and clover stubble I split down with the plough, early in the preceding November; and am satisfied, from all the observations I have made since I first began the cultivation, that whether the wheat stubble be as we call it, flat work, or in ridges, or the carrots are to be sown after clover or rye-grass, the land cannot be ploughed too early, so that the frost and snow may have their full effect in mellowing the ground, for the reception of so small a seed; and this is more necessary to be attended to, the stiffer and tougher the soil shall chance to be. But I let the land that had borne turnips alone, till the end of January or beginning of February, thinking this time enough, because the earth was thoroughly cleaned by the cultivation and summer hoeing, necessary for the crop of turnips; nor had I any reason to repent of this delay from the event.

Of the thirteen acres of wheat stubble, six were dunged for wheat, but not for carrots; four and a half not dunged at all; and two and a half for the carrot crop only; the clover land was dunged for the carrots, and of the seventeen acres that had been turnips in 1762, part had been tithed* for the turnips; and

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* Where sheep have been folded.

and the whole crop of turnips was fed off by sheep and neat cattle.

I find that four pounds of seed on an acre are sufficient; but as the seed is very small, light, and hard to separate, and disperse equally on the ground, I was at first a good deal puzzled how to overcome this difficulty; and though I was advised to make use of a mixture of sand, I did not find it answer, because the weight of the sand carried it all to the bottom of the seed cot; I sow it therefore now unmixed, as we do turnips, after having forced it through a fine chaff sieve by rubbing.

It will be three weeks after sowing, and sometimes longer, before the carrots appear; this is the principal advantage, besides the difference of expence that turnips have over them, for the latter are not sown till about Midsummer, and coming quicker to the hoe, get the better of the weeds more easily; for weeds do not grow near so fast about Midsummer as in the Spring. The carrots lying a longer time before they come up, and continuing afterwards a long time very weak, they are seven or eight weeks before they are fit for the hoe, and in the mean time afford the weeds an opportunity to get strength, in a season too, when unluckily they grow the fastest; I am therefore inclined to think, that, though it is necessary to sow carrots before turnips, it is better to sow them as late as you can with safety to the crop; for of mine, those sowed in April, on the clover stubble, came much the soonest to the hoe, though later sown; the wheat and clover stubble were ploughed three times; the piece after turnips but twice, the first time shallow, the second as deep as the staple of the ground would permit, and on this ploughing the carrots were sown.

As it would remove some of the objections to a carrot crop, and lighten much the expence of weeding, could they be sown later; and as this might be done, could the seed be made to come up sooner; I have sometimes thought it might be steeped in somewhat that would forward its vegetation, and afterwards sown, when dry enough to separate.

Yet however expensive the strength of the weeds in a carrot crop makes the hoeing of them, I have not observed that the crop itself is apt to suffer; for though the young carrots are quite covered in a thicket of weeds before hoeing, and should be buried in earth after hoeing, yet they seem no way hurt if they get clear again, as they will generally do if they are not cut off, or buried too deep for want of skill, in a fortnight after hoeing.

Our

Our hoe is six inches wide; if the carrots chance to be pretty clean, they may be hoed the first time for eight shillings per acre; but if much rain, the foulness of the ground before sowing, or the length of time between the sowing and hoeing, or all these things together, have filled the ground full of weeds, the expence of the first hoeing will amount to ten or twelve shillings per acre. About ten days or a fortnight after hoeing, I harrow them, which will displace the weeds, and prevent their growing again, which many of them will probably otherwise do, especially if it be showery weather. The harrowing does not hurt the carrot plants, but on the contrary does them much service, by bringing fresh earth to them, as well as killing the weeds.

About three weeks after the harrowing, in case it has not perfectly cleaned the ground of weeds, or in case new weeds come up, I hoe the carrots a second time, which costs me about four or five shillings per acre, as the ground is more or less foul; and after this, if there still remain any weeds, which will be the case if much rain falls in the time of the second hoeing, I follow it with a second harrowing.

I have however more than once observed, that when the weather has been favourable, and those I have employed to hoe have done their duty, that the carrots once hoed and harrowed have been as clean as those on which I have bestowed two hoeings and as many harrowings.

ART. XVI. *Extract from a Treatise on the forcing early Fruits, and the Management of Hot-Walls.*

By W. WILSON, Gardener to Sir James Cockburn.

THIS writer recommends the following method of training and managing vines, in a hot-house.

"The border where the vines are planted, should be made of a light loam, with lime, rubbish, or shell marle among it; let it be three or even four feet deep; if the ground underneath be naturally wet, raise the border in proportion, as the roots of the vines must not reach to the wet ground. This border may be as broad as the house will admit of, and it will be of use for early pease and French beans to be sown in it any time from the first of January to the last of March, according as they may be wanted for eating.

In this border there should be one row of vines planted two feet from the inside of the front flue, and these should be carried up by the side of the rafter, and under the glasses, at six inches

inches distance from the glass; then another row of vines should be planted six inches from the back flue against a trellis fixed on the back wall.

The vines should be planted three feet apart at first, and as the favourite sorts advance, bad plants or bad sorts should be taken away. The time of planting is about the first week of November.

Note, You must never water vines at all over their leaves, except those leaves look rusty, and appear to have a sort of dusty stuff upon them; then give them a little watering by way of cleaning them, once or twice, perhaps, in a season; but, not even that, unless they require it—and upon no account, ever while they are in flower. Water the border they are planted in, if too dry; but at the same time be sparing in watering that border and the early French beans planted therein, for fear of hurting the vines.

The most expeditious way to have grapes, at first setting out, is, to get vines which have been four years in pots; these (being put into the ground in their own pots, and the pot broke, and the pieces taken away as soon as set in the earth) will produce a good quantity of grapes (in proportion to the size of the vines) the very first summer after planting. But if such vines are not to be had, you may possibly get some of two years old that have been one year in pots; from these you will have grapes the second summer after planting. If you cannot procure such as those, get plants two years old from cuttings, which have not been potted at all, and from these you will have a full crop of grapes the third summer after planting, if you manage them as hereafter directed.

It is observed, that a cutting of a vine makes the best plant afterwards, though it be generally one year longer before it bears, than the plant. Sometimes, indeed, a cutting will out-grow and bear sooner than a plant, but that is very rare. You should set plants and cuttings alternately. The plant (not the cutting) will, the first summer after planting, grow eight feet; that should be cut down, when the leaf falls, (which is the best time to prune vines) to two or three buds or joints. You do not now cut for fruit, but for good wood for the second summer, which should not be allowed to branch into summer shoots,* but should be trained in one stem or shoot, and it will grow between twenty and thirty feet. This is a second summer's

* Those summer shoots should always be rubbed off close by the stem before they grow two inches long.

summer's wood, which shoot, if well ripened and very strong, and a good appearance of fruit in its unexpanded buds, and the wood in good order, should be pruned accordingly. For instance, a good shoot should be pruned so as to leave between thirty and forty joints or buds upon it, which buds will bear, some one bunch, some two, and some even three bunches; but there should not remain on any bud above two bunches at most, and sometimes only one bunch, according as they are strong, and likely to do well, or the contrary. The bunches you take away must be pinched off when very young, not cut off with a knife. The two or three buds next the end should be let run as far as twenty feet the third summer, for the leading shoots for the fourth summer.

Mean time care must be taken to encourage wood near the root, that is, to get two or three young shoots quite from the bottom, or as near it as possible; so that those that have run their race, and bore their fruit, may be succeeded by those young ones from the root. All the side bearing shoots (not summer shoots nor the three leading shoots) should be stopped or topped (as the gardener's phrase is) by pinching them off with your finger and thumb, at about the length of eighteen inches of that year's growth; and that shoot of eighteen inches must afterwards, at pruning time, be pruned down to five or six joints or buds of that year's growth (the same pinching off and pruning to be performed each succeeding year.) The following summer these side-bearing shoots will produce, each of them, three or four bunches of grapes; and will so increase every year both in fruit and wood, that in about seven years from their first bearing fruit, they will be in a state of perfection.

If grapes are too thick upon any bunch, clip the worst ones off, before they are the size of a pepper-corn, with very fine pointed scissars, to give free air and space for the remaining berries to swell.

In order to have ripe grapes the 20th of June, light your fire the 10th of February, and continue it till May, shorter or longer according as the season shall be more or less favourable. This crop of grapes will last till the grapes in the peach-house are ripe, that is, till about the end of August, or beginning of September.

The heat of this hot-house for vines should be always kept from sixty-five degrees to seventy-two degrees of Fahrenheit's thermometer, which is the pine-apple heat. This is to be understood of artificial or fire heat.

Method

Method of Forcing Strawberries.

As the forcing Strawberries is very profitable, and nothing ripens that fruit better than the tan-pits of the peach-houses, I shall here throw out a few hints on that subject, which my own experience has furnished me with, and which may be useful in bringing that fruit to the degree of perfection that it acquires in the natural ground. As the fine growing heat of a peach-house suits strawberries much better than the heat of pineries, vineries, or any places of that sort, and as they are such low growers that they cannot screen the peach-trees from the sun's rays, or do any other hurt in the peach-house; for these reasons I thought it proper to introduce the subject here.

The best method to rear them from the beginning, is to take the very earliest spring runners of the strawberry plants in the natural ground, and plant two of them in the centre of a half-penny pot,* in rich light loam, with some rotten dung mixed among it, and let the plants stay and grow in the pots all the summer, at the back of an east or west wall, so that they may get but half the day's sun. Let them stand in that situation till they are wanted for forcing. They will require no other care all that while but watering and keeping clear from weeds; also look over them once a week, and take off all their runners, as that will greatly strengthen the plants, and encourage the flower-stems to form strong.

Just before they are put into the house to force, shift them with the same composition of loam out of the halfpenny into penny pots, with the whole ball of earth to their roots; then give them (with the rose on the water pot) a gentle watering, so as to settle the mould round the ball in the pot. Take them then into the peach-house, and plunge them then to the brim into the tan-pit two inches separate, pot from pot, so that they may have sufficient air and room, and not draw weak. As the young leaves spring up, pinch off with your finger and thumb the old ones; also pinch off all the runners as they grow out, for they would (if let grow) run away with the strength of the plants, and hinder the berries from growing to a good size. If the young leaves seem to grow too weak or too thick, they must be thinned off. Pinch off always the tallest, which will encourage

* A half-penny pot is four inches and a-half deep, by five inches and a half wide; and a penny pot is six inches deep, by seven inches and a half wide.

encourage the leaf and fruit-stalks to grow strong; give them gentle waterings all over their leaves with the engine or watering pot, two or three times a week, as the heat of the house or the power of the sun may cause them to require it. By no means water over their leaves when in flower, as it will prevent them from setting fruit. But water at that time with the spout close to the side of the pot, under the flowers, taking care that the water does not touch the flowers. After all the fruit is set, water all over the leaves as before. Out of a peach-house forty or fifty feet long, may be produced too handsome dishes of strawberries a-week. While they remain bearing, be sure to have two or three frames full of plants, on a gentle dung-heat, coming forward to succeed these in gathering; by this means the table may be plentifully supplied from the end of February or the beginning of March, till they are ripe in the natural ground. Put in the first crop five days after the tan is put into the peach-house,* by that time the dung-heat will have warmed the tan, and will yield a kind heat to the roots of the plant.

The scarlet Virginia strawberry is the best for forcing. I have had very good crops of strawberries by taking up two-year-old stools, with balls of the natural earth at the roots, and potting them with rich loam, and forcing them immediately; but the former method is the best to have the fruit come large, plentiful, and well-flavoured."

For the FARMER'S MAGAZINE.

ART. XVII. *Method of making Horses lie down in the Stable, with a Query respecting the Grease.*

Mr. SYLVAN,

WHOEVER has any concern with horses, must know that it is sometimes very difficult to make them lie down in the stable; for some of them will stand night and day for several weeks, till their legs swell, and many disorders come on them, which are not easily got rid of.

This has frequently happened to myself, and I have been more than once in danger of losing a good horse, by the consequences which have naturally ensued. Many methods have I tried for curing this disorder, (if I may be permitted so to call it) but still without success.

I, some years ago, when I lived in Essex, applied to several horse-dealers and grooms; but they could none of them inform me of any remedy.

Chance at length, however, gave me that knowledge, which I had been long in vain endeavouring to acquire; for dining about a month ago, at the house of a friend, there happened to be a gentleman in company who had lately been buying some horses of a noted dealer.

As the conversation turned on horses, this gentleman, whose veracity I have the greatest reason to depend on, observed, that when he was about buying horses, he asked the dealer whether they lay down in the stable without trouble? To which he answered, they did; but added, that it was a matter of no consequence, as, if they did not, they might, by a simple method, be made to do it. "When," says he, "you have a mind to make a horse lie down in the stable, take a piece of strong pack-thread, or lay-cord, and tie it as tight round the horse's tail as possible, without breaking the skin, and as near as you can to the rump-bone; this," adds he, "will give him a pain in the back, and he will be glad to change his posture to get ease; and when he finds he cannot in any other way procure it, he will lie down, which he will find the most easy posture; and he will, of course, take a liking to it."

I was so much pleased with the simplicity of this method, that I immediately thought of communicating it to you for the benefit of your readers, who, if they entertain the least doubt of it, may easily try whether it answers in practice, without trouble, and, what is still better, without either hazard or expence.

I am, I acknowledge, very fond of that noble, generous, and useful animal, the horse, and am, for that reason, very sorry that so few remedies for the disorders incident to him should have hitherto been inserted in your entertaining and instructive collection.

I should take it a very particular favour if some of your correspondents would inform me and many other readers, who I dare say, would be glad to know, what is the best remedy for a horse that has the grease; some to whom I have applied, say it is a disorder in the blood, and requires internal medicines; to which opinion I incline; on the contrary, others assert, it can be cured by external applications; but then they are at a loss to tell of what particular nature those applications should be.

III Proper

Proper and moderate exercise is, I know, of great use to a horse that has swelled heels; but this cannot be called a remedy; it removes indeed, partially, for a time, the effects, but the cause still subsists, as is evident from a return of the swelling when the exercise is abated.

My wish is, to eradicate the cause of the disorder, whatever it may be; and I own, I think it a proper subject for a very useful letter from some person who may be enabled, by experience, to gratify me and others in this matter.

A. H.

ART. XVIII. *Receipt for the Yellows in Horses.*

TAKE away two quarts of blood; salt-petre, juniper-berries, and turmeric, of each two ounces; madder, and castile soap, of each one ounce; Barbadoes aloes, half an ounce; Saffron, one dram; powder the hard things, and cut the soap small, and mix them with three gills of warm ale or porter, and a large spoonful of sugar: Give four of these drinks, every other day one, leaving out the aloes in the three last. Give mashes of bran and warm water three or four times a day.

ART. XIX. *Receipt for the Farcy in Horses.*

TAKE red precipitate, finely ground in a marble mortar, two drams; or of white three drams; of Venice treacle, one ounce; of diapente powder enough to make it into a ball. Keep him warm, and give him water warm.

A Diet Drink after the Ball.

Take of rue, two handfuls; roots of madder, and sharp-pointed dock, each four ounces; guaiacum wood, and saffrafras, of each two ounces: Boil them in four pints of stale beer to three pints; then strain it off, and give it luke-warm. Repeat the ball and drink every third or fourth day for three times.

ART. XX. *On the Benefit of Salt to Cattle, with the Method of using it.*

I Do not find that the Farmers in England know the great advantages which may be derived from the use of salt in the business of farming cattle; whereas in America we think it, in a manner, absolutely necessary, and accordingly give it to

almost every kind of cattle; and those with parted hoofs are particularly fond of it.

There cannot be a greater instance of this fondness, than the wild cattle resorting to the salt licks, where they are chiefly killed. We give this name of salt licks to the salt springs, which in various places issue naturally out of the ground, and form each a little rill.

Horses are as fond of salt as black cattle; for with us, if they are ever so wild, they will be much sooner brought to a handful of salt than to any kind of corn whatever.

We also give salt to our sheep; and to this practice it is generally ascribed, that the American cattle, in general, are so much more healthy than the same animals in England; certain it is, that they are there subject to much fewer diseases.

There is one very advantageous practice we have, which I cannot enough recommend to the notice of the Farmers here in England; it is mixing salt with our hay-ricks when we stack it, which we call brining.

Just before I left America, I had a crop of hay, which was in a manner spoiled by rain, being almost rotted in the field; yet did this hay spend as well as if it had been got in never so favourably.

When my servants were making up the stack, I had it managed in the following manner; that is, as a bed of hay was laid about six inches thick, I had the whole sprinkled over with salt; then another bed of hay was laid, which was again sprinkled in like manner; and this method was followed till all the hay was stacked.

When the season came for cutting this hay, and giving it to my cattle, I found that so far from refusing it, they eat with surprising appetite, always preferring it before the sweetest hay, that had not been in this manner sprinkled with salt.

AMERICANUS AGRICOLA.

ART. XXI. *Directions for managing the Kitchen Garden in February.*

THE beginning of this month, make hot-beds for cucumbers, melons, early pease, strawberries, kidney-beans, &c. as also to sow some cauliflower-seeds, to succeed those which were sown the August before: But these late crops are only proper for moist soils, in which they are often as good as those preserved through the winter. Dig and trench such quarters of your kitchen-garden as were not before done, and plant out
your

your plants of large-sided or sugar-loaf cabbage, which were sown the August before; Plant a second crop of Windsor beans, and sow pease, carrots, onions, leeks, parsnips, radishes, spinach, lettuce, scorzonera, scarrets, fassaty, parsley, corn-fallad, asparagus, with most other hardy seeds.

Plant garlick, shalots, rocambole, and onions for seed; or to draw up in April for scallions.

If the weather is mild towards the middle or latter end of the month, you must transplant your cauliflower-plants out of the beds where they were preserved through the winter; and slip and plant artichokes, if the soil be dry, otherwise it will be better to defer this work until the next month.

Continue to make hot-beds for asparagus to come in the next month, and be very careful of your cucumber and melon plants at this season, especially if the weather be dark and cloudy, which is very often destructive to them, if great care be not taken to preserve an equal heat in the beds, and air given to them at all opportunities.

Plant potatoes and Jerusalem-artichokes, if it was not done before, and sow small fallad-seed upon moderate hot-beds, or in warm borders under walls.

You may now safely transplant fruit or forest-trees, if the weather be mild, and lay down the branches of hardy trees to take root.

Towards the latter end of the month you must graft pears, plumbs, and cherries; set kernels, nuts, or stones of fruit; sow beach-mast, and other seeds of forest-trees, and hardy seeds of forest-trees, and hardy flowering-shrubs.

Prune and train up such of your espalier fruit-trees as were not before done, and prune apricots, plumbs, pears, &c. against the walls; but let peaches and nectarines be the last done, for their branches are very subject to decay where they were cut, if it should prove bad weather after it is done.

ART. XXII. *Premiums offered by the Bath Agriculture Society, for the Counties of Somerset, Wilts, Gloucester, and Dorset.*

1. **FOR** raising the best and largest crop of turnips, not less than twenty acres, twice hoed, 10l.
2. To the labouring-man, who being an inhabitant of either of the four counties, shall hoe the greatest quantity of turnips, in a workmanlike manner, Five Guineas.
3. For an effectual remedy for destroying the fly in turnips, Five Guineas.

4. To

4. To the person who shall **SETT** the greatest quantity of wheat, not less than five acres, Ten Pounds.

[The Norfolk method of setting wheat is recommended, as described in the Farmer's Magazine for December, 1777.]

5. For raising the greatest quantity per acre, not less than ten acres, of winter vetches, Six Guineas.

6. For ditto ditto, summer vetches, Six Guineas.

7. For raising the greatest quantity not less than ten acres of French or Buck wheat, Six Guineas.

8. For sowing the greatest quantity of land, not less than thirty acres, with Saintfoin, Ten Guineas.

9. For raising on a farm the greatest quantity of onions, per acre, on not less than two acres, to be sown, Six Guineas.

10. To the Farmer who shall raise the greatest quantity of Carrots per acre, not less than three acres, and produce the best and cleanest crop, Ten Guineas.

11. For rearing and cutting for Oxen the greatest number of calves, not less than twelve, Twelve Guineas, on a farm not rated at more than Fifty Pounds per annum.

12. For the next greatest number not less than eight, on a farm not rated at more than Thirty Pounds per annum, Eight Guineas.

13. For raising the greatest quantity of Potatoes, from seed, on not less than half an acre of land, Five Guineas.

14. For the next greatest quantity, on not less than a quarter of an acre, Two Guineas.

15. For raising the greatest number of Calves, not less than five, without milk, in the best and cheapest manner, Ten Pounds.

16. For fattening the greatest number of Pigs, not less than ten, to weigh not less than sixteen score each, on a farm not rated at more than 100l. per annum, Five Guineas.

17. For a certain cure for the Foot-Rot in Sheep, and a method by which the taint may effectually be destroyed, Ten Guineas.

18. For planting the greatest quantity of Apple-trees, in the borders of fields, Five Guineas.

19. For planting the greatest quantity of waste land, not less than two acres, with Birch, Ten Guineas.

20. For planting the greatest quantity of boggy land, not less than one acre, with Ash, for timber, poles, or coppicing, Five Guineas.

21. To the man-servant, (not a parish apprentice) who shall have lived the longest, not less than four years, in one service, Three Guineas.

22. For

22. For the next longest time as above, not less than three years, Two Guineas.

23. The same premiums as above to maid-servants.

24. For the best original essay written on the improvements in Agriculture, that have been successfully introduced within the last fifty years,—an honorary reward.

25. For introducing (and employing the greatest number of women and girls therein) the manufacture of Black Silk Lace, in any town or city within the four counties where it has not yet been made, Fifteen Guineas.

26. To the woman or girl who shall work the greatest quantity, not less than one hundred yards, Three Guineas.

27. For the second greatest quantity as above, Two Guineas.

28. For the third greatest quantity, One Guinea.

29. For producing the greatest increase both of bulk and weight, in making the greatest quantity, not less than fifty quarters, of Malt, Ten Guineas.

30. For extracting the essence of oak-bark for tanning leather, from the greatest quantity, not less than one ton, Ten Guineas.

31. For producing the best hide tanned with the said essence only, Five Guineas.

32. For burning and collecting the greatest quantity of ashes, burnt from fern and weeds only, Five Guineas.

33. For discovering the best and cheapest method of effectually rendering hard water soft, without the use of chalk, Three Guineas.

34. For preventing boots and shoes from imbibing moisture when worn in wet weather, Two Guineas.

35. For an effectual method of marking sheep, without pitch or tar, which shall not injure the wool, Ten Pounds.

36. For the best improvement of the machines called Spinning Jennies, Five Guineas.

37. For introducing the spinning of woollen yarn, in any city or town where no woollen manufacture has yet been established, Twenty Guineas.

38. To the woman who shall spin the greatest quantity, not less than one hundred pounds weight of the said yarn fit for use, Three Guineas.

39. ——— The same for spinning flax.

40. For the greatest quantity, not less than one ream of good writing-paper, made without linen rags, Ten Guineas.

41. For the best, cheapest, and most useful machine for conveying green crops, off wet arable land, Ten Guineas.

42. For

42. For the best drill-plough, for carrot-crops, &c. Five Guineas.

43. ————— horse beans, Five Guineas.

44. For the best constructed machine for cutting for bruising green wood, which shall exceed any now in use, Five Guineas.

45. To the person who shall introduce the new-invented engine for making wool-cards, used in Yorkshire, &c. Five Guineas.

46. For the best method of winding long-skain'd silk, Five Guineas.

47. For the best and cheapest small portable crane, to command any weight, with safety, not less than one ton, Ten Guineas.

48. For a portable apparatus that shall effectually destroy or expel noxious vapours in coal mines, and produce sufficient light for working them, Thirty Guineas.

49. For the best machine for raising water to float dry pasture lands, to be different from any now in use, Ten Guineas.

EDMUND RACK, Secretary.

N. B. The meetings of the Society to be held in future on the second Tuesday in every month, at eleven o'clock

ART. XXIII. *Method of distinguishing the real Mushroom, from the venomous Kind, and also the Cure from Injuries that may be received by them.*

THERE are two species of mushrooms, the real and the venomous kind; the true mushroom never hurts; the mischief arises from the venomous kind, which may justly be ranked amongst the class of poisons, such as hemlock, and the deadly nightshade, &c. To distinguish the one from the other, the stalk and head of the real mushroom are stronger, and of a greater substance than the venomous sort, and when peeled, much whiter. The stalk and head of the venomous mushroom are thinner, want the substance of the good species, and are so tender, that they will hardly bear to be touched, and when peeled is of a dirty dun colour. The method of cure:

As soon as the patient perceives himself ill, let him take directly two large spoonfuls of wine vinegar, and repeat one spoonful every hour, until the symptoms disappear; but if an inflammation of the bowels is brought on, you must omit the vinegar, and take four grains of tartar emetic for a vomit, and work it off by drinking of warm water and oil, and if there is a suspicion that the coats of the stomach, or intestines, are corroded or ulcerated, take a decoction of barley, with figs, raisins, and saffrafras.

THE



T H E
FARMER'S MAGAZINE.



*A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]*

American Husbandry.

PERU, *concluded.* **A**LL the vast rivers which descend from the Andes, run eastward into the Atlantic ocean; Peru is only watered by streams, which fall from the mountains like torrents. The low country is sandy, and barren for the most part, and not being refreshed by rain, it requires the assistance of canals to water and fertilize it; these the ingenuity of the Peruvians rendered effective, and by their means a regular supply of moisture was at all times conveyed to their fields.

The plough was unknown, and the earth turned by a mattock; and in this work both sexes joined; even their Princes, the children of the sun, cultivated a field near Cuzco with their own hands, and called it "triumphing over the earth."

The cause of the want of rain in all the flat country of Peru, is difficult to be assigned; though the agents in it are not improbably the constant south-west wind, that prevails there for the greatest part of the year; and the immense height of the mountains, covered with a constant snow. The plain country between, refreshed as it is on the one hand by the cool winds that blow from the frigid regions of the south, and heated as uniformly by the direct rays of the equinoctial sun, preserves such an equal temper, that the vapour once elevated can hardly ever descend in rain: But in the mountainous part of the country, by the alternate contraction and dilatation of the air from the daily heats, and the succeeding colds, which

the snows communicate in the absence of the sun, as well as from the unequal temper of the air which prevails in all hilly places, the rain falls very plentifully; the climate in the mountainous countries is extremely changeable, and the changes sudden.

The mines of gold in Peru, are almost all in the northern part, not very remote from Lima; those of silver almost wholly in the southern. The voyagers who treat of this country, are generally pretty diffuse in their accounts of the principal places, where mines are found; but it does not therefore give us encouragement to insist much on these particulars; because they contain very little instruction in themselves; and if they were things in their own nature instructive, it would be little to the purpose to dwell upon what is continually changing. New mines are daily opened, and the old exhausted or deserted. The towns shift with the mines. A rich mine is always founder of a town in proportion to its produce; the town which it subsists, when the mine is exhausted, disappears. Indeed the great mines of Potosi, in the province of Los Charcos, are the inheritance of ages; and after having enriched the world for centuries, still continue the inexhaustible sources of new treasure. They are not, however, quite so valuable now as formerly; not so much from any failure in the vein, as from the immense depth to which they have pursued it, which by the greater labour necessary lessens the profit on what it yields, in proportion as they descend; besides new mines are daily opened, which are worked at a less expence; so that the accounts we have had of the great number which inhabited the city of Potosi, when Mr. Frezier was in that country, must have since suffered some abatement. It had then upwards of seventy thousand souls, Spaniards and Indians; of which the latter were six to one.

The Spaniards oblige this unfortunate people to send annually a certain number from the villages of the adjacent country, who are compelled to work for a limited time; afterwards they may return. But having lost the sweetness of their former connections, they that survive this slavery commonly settle in the city of Potosi.

It is incredible how these mines (the most terrible scourge with which God could afflict the inhabitants) have contributed to depopulate this country. Worse they are than sword or pestilence; equally fatal to their lives; and where those escape, they are embittered by the circumstance of an ignominious slavery, without any prospect of end or mitigation.

The

The effects of this servitude would be yet more fatal, if it were not for the use of an herb which the inhabitants call *Coca*, to which they ascribe the most extraordinary virtues, and which they constantly use. Its qualities seem to be of the opiate kind, and to have some resemblance to those of tobacco; for it produces a kind of stupid composure. It is an antidote against poisons and poisonous effluvia, and makes those who use it, subsist a long time without food.

The commodities of Peru for exportation are silver, gold, quicksilver, cochineal, Vicunna wool, Jesuits-bark, Guinea or Cayenne pepper, oil, wine, and brandy. The merchants of Lima, both on their own accounts, and as factors for others, carry on a commerce with all the quarters of the globe. To the harbour of that city all the product of the southern provinces are conveyed, in order to be exchanged for such articles as the inhabitants stand in need of. The merchandize, &c. from Europe and the East-Indies, are sent to the same harbour; and the commodities of Europe, Asia, and America, are there bartered for each other. Such goods as there is no immediate vent for, the merchants of Lima purchase on their own accounts, and lay up in warehouses; well knowing they shall soon dispose of them to the best advantage, since by various channels they have a communication with almost every commercial nation.

In Quito and Cuzco the inhabitants carry on considerable manufactures of cotton, wool, flax, and leather. They have also, though ill instructed in the art, the rudiments of a taste for painting, and there are a prodigious number of pictures painted in those provinces, which are dispersed all over Peru and Chili.

Wool makes one of the most valuable commodities of the growth of this country. And it is not more remarkable for its fine long staple, than for the singularity of the animal which carries it. It is sheered from a sort of sheep, which they call *lamas* and *vicunnas*; the *lamas* have small heads, resembling in some measure both an horse and sheep; the upper lip is cleft like that of a hare, through which, when they are enraged, they spit even to ten paces distance, a sort of envenomed juice, which, when it falls on the skin, causes a red spot and great itching. The neck is long like that of a camel, the body resembles that of a sheep, but the legs are much longer in proportion. This animal has a disagreeable smell, but its flesh is good; and it is extremely useful, not only for the wool, which is very long and fine, but as it is a beast of

burthen, strong, patient, and kept at a very easy expence. It seldom carries above one hundred and fifty pounds weight, but then it carries that weight a vast way without tiring, eats very little, and never drinks. As soon as night comes the lama lies down, and no blows can get him to move one foot after the time he destines for his rest and food.

The vicunna is an animal resembling the lama, pretty much as the dromedary does the camel. He is smaller and swifter, with a far finer wool, but otherwise exactly like the lama in all respects.

Peru is the only part of Spanish America which contains mines of quicksilver. The principal one is at a place called Guaricavelica, where it is found in a whitish mass resembling brick ill-burnt. This substance is first reduced to fine powder, and the mercurial parts volatilized by fire, and received in steam by a combination of glass vessels, where it condenses by means of a little water at the bottom of each vessel, and forms a pure heavy liquid, called mercury, or quicksilver.

Vast quantities of cattle were imported by the Spaniards into Peru, when they took possession of that country; these are now amazingly increased, and they run wild, and are hunted like game. There are few wild beasts, and those not very fierce or dangerous; but the most remarkable animals are the Peruvian sheep, called lamas, and the vicunnas.

There is a third animal, called the guanaco, which resembles the two former, and is larger, but its wool long and harsh. These are of great service in the mines, carrying metals in such rugged roads, as would be impassable to any other beast.

The most remarkable birds found in Peru, are the condors, and zumbadors, or hummers. The condor is prodigiously large, exceedingly carnivorous, frequently seizing the lambs as they are feeding on the heaths, and flying away with them.

The zumbador, or hummer, is a night-bird, peculiar to the mountainous deserts of Peru. They are seldom seen, though frequently heard, both by their singing and a strange humming made in the air by the rapidity of their flight, which, when near, makes a noise equal to that of a rocket. Ulloa tells us, that he offered a reward to the Indians if they could procure one of these birds; but all they could do was to get a young one scarce fledged, though it was then the size of a partridge, and speckled with dark and light brown. The bill was proportionate and strait; the aperture of the nostrils much larger than is usual in the feathered creation, the tail small, and the wings of a proper size for the body.

The

The insects found in Peru are musquitos, in prodigious numbers, miguas, and several others equally venomous: Also a variety of beautiful butterflies; and that valuable article in the commerce of this country, the cochineal, of which we shall add a particular description. The cochineal was formerly supposed to be the fruit or seed of some particular plant, but at present every one is perfectly convinced of its being an insect. It is bred on a plant called *Opuntia*, or Prickly Pear; which consists wholly of thick succulent oval leaves, joined end to end, and spreading out on the sides in various ramifications. The flower is large, and the fruit in shape resembles a fig; this is full of a crimson juice, and to this juice the cochineal owes its colour. When the rainy seasons come on, they who cultivate this plant, cut off those heads which abound most with such insects as are not arrived at their full growth, and preserve them very carefully from the weather and all other injuries. These branches, though separated from their parent stocks, preserve their freshness and juices for a long time, and this enables the insect not only to live till the rains are over, but to grow to its full size, and be in readiness to bring forth its young, as soon as the inclemency of the season is past. When this time comes on, they are brought out, and placed upon the proper plants, disposed in little nests of some mossy substance. By the enlivening influence of the fresh air, they bring forth in three or four days at farthest; when the young scarce bigger than a mite, run about with a wonderful celerity, and the whole plantation is immediately peopled; yet what is something singular, this animal, so lively in its infancy, quickly loses all its activity, and attaching itself to the least exposed and most succulent part of the leaf, it clings there without ever moving. It is also remarkable, that it does not, or at least in any visible manner, injure the plant, but extracts its nourishment by means of its proboscis, through the fine teguments of the leaves. The males of this insect have not the least appearance of belonging to the same species. Far from being fixed to the spot, they have wings, and are continually in motion; they are smaller than the female cochineal, and of no value, the latter only being gathered for use.

There are always four gatherings made in a year, which are so many generations of this animal. When the persons employed in this work are properly careful, they brush off the insects one by one with a sort of hair pencils, and take them as they fall; but they often brush the whole plant in a careless

careless manner, so that fragments of it are mixed with the cochineals. The value of this drug chiefly consists in the method of killing and drying the insects, which is performed three ways. The first is by dipping the basket into which they are gathered into boiling water, and afterwards drying them in the sun; this the Spaniards call *renegrada*. Secondly, by drying them in ovens made for that purpose; this, from its grey colour, veined with purple, is called *jaspeado*. The third manner is, when the Indians dry them on their cakes of maize, which are baked upon flat stones. This last is the worst kind, as it is generally over-dried, and often burnt. It is known by the appellation of *negra*. One admirable quality in this drug, and which is the more extraordinary, as it belongs to the animal creation, is, that it never decays. Without any other care than having been put into a box, some have been known to keep sixty, and others upwards of a hundred years, and be as fit for the purposes of manufacture as at first. It is used in dying all the several kinds of the finest scarlet, crimson, and purple.

The vegetable productions are, plenty of European corn, maize, cassava and other roots, pine-apples, melons, grapes, from which the Peruvians make excellent wine and brandy, guavaes, patolas, bananas, tamarinds, olives, and figs; several sorts of gums and drugs, as *sarsaparilla*, dragons blood, balsam of Tolu and Peru, some rhubarb, storax, and *guaiacum*. Among their forest-trees the most valuable is that which yields the *quina*, or Jesuits bark. It is about the size of a common cherry-tree; the leaves are round and indented, and it bears a long reddish flower, from whence arises a pod containing a kernel resembling an almond; but neither the kernel nor the fruit have the same virtues as the bark, which is an efficacious medicine in intermitting fevers, and various other disorders. In the plains of Truxillo there is a tree which bears twenty or thirty flowers, all of them different, and of divers colours, hanging like a bunch of grapes. Another, called *maguey*, is of the utmost use to the inhabitants, as it supplies them with honey, vinegar, and drink. The stalks and leaves are not only good to eat, but may be wrought like hemp; and from them they make a thread called *pica*. The wood is fit for covering houses; the prickles or thorns, with which it abounds, serve for needles, and the fruit has all the qualities of soap. Guinea or Cayenne pepper is produced in the greatest abundance in the vale of Arica, a district to the southern parts, from whence they export annually to the value of six hundred thousand crowns.

The

The district, which produces this pepper, is small and naturally barren; its fertility is owing to a manure brought from an island called Iquiqua. This is a sort of yellowish earth of a fetid smell, and is generally thought to be the dung of birds.

[*To be continued.*]

ART. II. *Mode of Farming for several Years.*

[Continued from Page 8.]

THE winter of 1772, and the spring of 1773, were busy times with my horses and men, as well as myself. I have heard it advanced, Mr. Sylvan, in almost all books, that chalk is only a dressing for strong land; it is a mistake; there is scarce any kind of land to which chalk will not do amazing service; I have known it do wonders in light land. I imagine the advantages of chalk to proceed not so much from its being a manure, as from its altering the nature of the soil; for I do not consider chalk as possessing within itself any power of vegetation. But if we may be allowed the expression, it is rather a medicine than a food.—Every day we could possibly get on the land with Mr. Sharp's rolling carts, we dressed over all the young clover with the best manure we could collect, and chalked the whole with about eight waggon loads to an acre; fetching some between whiles, and hiring a chalk team to assist. Thus we chalked No. 2, and No. 13, in all twenty-three acres, before the first day of March. No. 2, was dunged with stable-dung entirely.—I had my fields rolled with a heavy roller, and bush harrowed, so that at the mowing time, there was less inconvenience than might have been expected. In consequence of this chalk dressing, I let No. 13, abide in grass a year longer, but No. 2, I ploughed up at Michaelmas, and sowed with wheat.

My turnips being this year on strong ground, I was obliged to draw up, which were carried to No. 10, for my sheep and cattle; a method I by no means approve of, as it is tedious, nasty, and expensive; for when they are fed off on the spot, you may part off what quantity you think proper, and if any refuse remains, it is no loss, as it manures the land; saving by this means all the trouble of the other method: It must be observed, that I began the first year to dress my meadows, and this year I finished them.

The

The state of accounts will now stand :

1773.			Acres.
No. 1.	Beans, dunged,	_____	8
No. 2.	Clover, dunged and chalked,	_____	10
3.	Wheat,	_____	8
4.	Vetches,	_____	6
5.	Barley,	_____	10
6.	Beans, dunged,	_____	10
7.	Turnips, at six ploughings,	_____	8
8.	Barley,	_____	5
9.	Wheat,	_____	16
10.	Barley,	_____	8
11.	Turnips,	_____	7
12.	Turnips,	_____	10
13.	Clover,	_____	13

My produce was,

18 acres of beans,	_____	62 quarters,
24 acres of wheat,	_____	68 quarters,
23 acres of barley,	_____	95 quarters,
No. 2. 10 acres of clover, 2 mowings,		30 tons weighed out,
No. 13. 13 acres, once mowed, about		20 tons.
I am, &c.		

C. WILLIAMSON,

For the FARMER'S MAGAZINE.

ART. III. *On the Cultivation of Lucerne.*

Mr. SYLVAN,

EVER since the publication of your Magazine I have esteemed it to be the proper vehicle of agricultural knowledge and experience. With this assurance, I venture to apply to you for a direction in the culture of Lucerne in the broadcast way; one of your correspondents has communicated his treatise to the public, though, I must confess, not with that minuteness it requires; he has mentioned no particular time of the spring, nor the quantity of seed to the acre. As I live where this plant was never cultivated, I must desire you to be very exact, in order to which, I will give you an account of the nature and situation of the land: It is a good clay loam, worth twenty shillings per acre, very dry and healthy, situated almost opposite to the south, with a small inclination to the west, defended by a range of hills from the north and east winds;

winds; the land was wheat last year on a summer fallow, is now very clean and in good heart.

I think with this relation you cannot err in forming your judgment; therefore, I would wish to be informed, what time is the most proper for sowing the seed? Whether with or without corn? The quantity per acre? Whether it is to be cut this year, or to be manured at the time of sowing, and what sort of manure? Whether there is any danger in the vegetation of the seed? What is the true criterion of good seed? If there are any more observations which occur to you, I hope you will mention them, as I am quite a novice in the nature of this plant. It is my intention to mark the progress of this vegetable with the utmost accuracy and exactness, and will at the end of the year inform you of the state of my cultivation. I could wish to know the proper time to sow the large American cabbage-seed, and the time of transplantation. It would be an advantageous article in your Magazine, to recommend a seeds-man on whom the public might confide.

I am, sir, your humble servant,

J. R.

[Although we do not think clay loam to be the best soil for Lucerne, yet, with the situation pointed out in our correspondent's letter, we imagine that excellent grass may succeed; we do not think wheat stubble the best adapted for the growth of young grass; a crop of turnips sown after, would have mellowed the land, and a ploughing, at least after the crop was off, would have been, we almost were going to say, necessary; if that is not already done, let it be immediately done, and give at least three good ploughings by the middle of April; then sow the seed, without corn.—As we suppose the summer fallow was dunged, it will scarce want a dressing now; the quantity of seed should be about six or eight pounds per acre, and should be sown if possible in dry weather, that it may be properly inured to the earth, before it begins to grow. There is an appearance in good seed which the *tactus* and *visus eruditus** of the Farmer will understand, but cannot well describe; a seeds-man of reputation will seldom, perhaps never, deceive, when a fair price is paid for the commodity. Whether it should be cut the first year or not, is a question circumstances in future must determine; we imagine it may; the writer of this article having himself cut some of his own growth the first year, the time of cutting being when the plant is in flower; observing, that it be dry weather, as for clover and other grass. We have here, according to our correspondent's request, pointed out the broad-cast method, but we would prefer the drilling it by means of the plough, of which a plate was given in this Magazine for June 1777.

* Handling and skilful examination.

We will thank J. R. for his journal, and other favours, and would be glad to know his real name, which shall be kept secret,—directed to Mr. Cruttwell, Printer, Bath.]

ART. IV. *On the Cultivation of Madder.*

Mr. SYLVAN,

I HAVE been a practical grower of madder for several years, and have tried it upon lands of various kinds; and as I apprehend the cultivation of it in England is of great importance to our trade and commerce, I am willing to communicate to the public, (thro' your Magazine) the result of my experiments.

My first trial was upon a small piece of ground near my house, of about forty perches of land, lying pretty low and moist, of a deep mellow soil, and rich black mould, a little inclining to sandy; and underneath about two feet and a half, and in some places three feet of good earth, was a bed of loose sand, with a mixture of gravel.

I have been the more particular in the description of the nature of this land, because it produced the best English madder I ever had, both as to quality and quantity.

In March I caused this plot to be dug a full spit deep; and as it was under natural grass for some years before, I took care in digging to throw the top turf as low as possible, turning the mould uppermost, in order to prevent the grass from springing; which had the desired effect. I also took care to pick out all the roots of weeds, and other noxious plants, which were found therein.

In this state it remained above a month, then with a line I divided it into beds of five feet wide, and two feet intervals between each bed, raising them a little in the middle with some of the earth in the intervals; then with iron rakes the beds were reduced to a fine garden mould, leaving them a little rounding like asparagus-beds, in order to shoot off the rain-water; and having procured some strong pack-thread, at every foot distance I tied a small piece of white woollen-yarn, and thus continued the whole length of the line, which afterwards served as a rule where to fix the plants.

This line was extended the whole length upon the outermost bed, six inches from the side ridge of it; then with ironshod dibbles a madder-plant was set strong in the ground, near every tuft of white yarn fixed along upon the line.

This row being thus planted, the line was removed two feet forwards, which brought it exactly to the middle of the bed;
this

this being also finished, the line was again removed two feet, and planted as before; and this method I continued till the whole was planted. Thus there were three rows of plants in each bed, at two feet distance, and one foot apart in the rows; and the distance between the innermost row of one bed, and the outermost row of the next adjoining bed, was three feet.

During the first summer I kept the young madder quite clear from weeds by hand-hoeing, as soon as any appeared; and in October following I took the haulm, that over-ran the intervals, and spread it over the beds, without cutting any off; then with a spade I covered the haulm with the earth from the intervals about two inches thick.

In this condition it remained during the winter, and in March following the young madder came up very thick and strong; and as fast as any weeds appeared, I kept them down by hoeing, as before; but in the second summer I found there was no necessity of repeating the hoeing after the middle of June; for the haulm was now grown so very luxuriant as entirely covered the surface of the ground, and thereby prevented the weeds from growing; and in October I again spread the haulm upon the beds, and covered it over with the earth in the intervals, as before.

There are three good reasons for covering the madder in winter.

The first is the new dressing of the beds with fresh untried earth.

Secondly, by this method deep trenches are formed at proper distances throughout the whole plantation, and consequently the beds are kept dry and healthy, and thereby the roots are prevented from rotting, which otherwise they are apt to do if the water continues too long soaking on the beds.

The third reason is still more efficacious; for by this means the haulm is entirely rotted, and the volatile salts contained therein are washed down to the roots by the winter rains, which tends more to increase the vegetation of the plants than double the quantity of any other sort of manure whatsoever, and for this reason, because the salt, inherent in the haulm, is of the same kind with that which was before extracted out of the ground by the growing of the madder, and is now returned into the earth again, in order to renew its former office of vegetation.

In the third summer very little work was required, only two slight hoeings in April and May, owing to the strength of the haulm, which covered the ground as in the preceding summer;

mer; and in October following, the roots were taken up, and this small piece of ground produced one thousand nine hundred and sixty-five pounds * of green roots, which were very large, and the madder, upon trial, was found to be exceeding good.

In cultivating madder, great care is to be taken to see that every set or plant has some small fibres at the root; and this ought particularly to be observed by those who are employed to take them out of the ground; for unskilful persons, not used to the business, very often draw up such as have no fibres at all, and then they certainly miscarry.

The best way is, to remove the earth from the mother-plant with a small hand-hoe, or some such instrument; and then you may easily find which of the young plants have fibres, and which not.

In the second spring you must be cautious not to take off above two or three sets from each root; but in the third spring, when they are deeply rooted, you may take off almost as many as you please, without injury.

The sooner the young plants are set after they are taken up, the better; and if you are obliged to have them at a distance, so that they cannot be set again in less than three or four days after they are taken up, they must be well watered at first planting, and repeated, as often as you see occasion, till they have taken root.

In dry seasons, the young plants very often die for want of moisture soon after they are planted; and in large plantations the expence of watering would be too great; therefore I always get my land ready early in the spring, and wait for some showers falling; and when I find them just at hand, and sometimes in the rain, I get a great many hands, and immediately go to work, some † taking up, and others raking and planting, so that the whole is soon finished, even in a large piece of ground: and when the plants are well watered at first, they soon take root, and afterwards they will stand a dry summer very well.

In

* This is seventeen hundred, two quarters, and five pounds, and, in kind, at fifteen shillings per hundred, (which is a low price as madder now sells) comes to thirteen pounds, three shillings, and two-pence, being the produce of a quarter of an acre only; which sum, multiplied by four, makes the produce of an acre fifty-two pounds, twelve shillings, and eight-pence.

† Women are generally employed in this work, and two men will plant as fast as six women can draw.

In the most favourable seasons some few plants always die soon after they are set; therefore, about three weeks after planting, you must go over the madder ground, and replace such as have failed, with the best and most likely plants; and if the season be dry, let them be well watered at first planting; but if, after all, you find any miscarry, (which in a dry summer they sometimes will do) the best way is to fill up the vacancies† with winter plants, in October following, just before you cover the haulm.

Madder may be successfully planted from the middle of March to the end of May, according as the spring is either forward or otherwise; but if showers should happen to fall in April, this is the best month in the year for planting madder. There should be no dung of any kind laid upon the ground, during the time the madder is growing, because it has been found to give the madder a bad colour; and if the land is in good heart, and proper for the purpose, there will be no need of it.

About five years ago, I planted an acre of madder on a light, dry, sandy soil, which produced a tolerable crop, but nothing equal to the other.

I likewise tried it upon an acre of land, of a loamy, meadow soil, somewhat sandy, about a foot deep in mould; and underneath is a cold stiff clay; from this piece I had great expectations, as the plants thrived very well at first, but in the second summer when the roots reached the clay, the plants died away, and came to nothing; therefore I am satisfied, a cold clay is by no means proper for madder.

I have also at this time, two other acres of madder, which I intend to take up next winter; it will then have stood three summers. The soil is a deep hazle mould, worth about twenty shillings per acre. Instead of digging it up with a spade, I plough-trenched it at least eighteen inches deep, but managed in all other respects, like the former. From the appearance it made last summer, I have no great expectation from this plantation, though, I fancy, it will be a saving crop.

Expences

† In September or October, when the madder is dug up for use you may observe, near the crown of the root, several branches thick set with small buds, and some fibrous roots growing underneath; these, when cut into lengths of about three or four inches each, and planted any time during the winter, will grow very well.

N. B. They are called winter plants by way of distinction.

*Expences attending the Culture of an Acre of Madder, sup-
posing the Land to be worth Forty Shillings per Acre.*

	£.	s.	d.
Rent for three years, ———	6	0	0
Digging ditto, at two-pence per perch, ———	1	6	8
Dividing ditto into beds, two men one day, at one shilling each, ———	0	2	0
Raking ditto, two men one day, at one shilling each, ———	0	2	0
Planting ditto with two thousand plants, one day, at one shilling and six-pence each, —	0	3	0
Six women to take up two thousand ditto, at six-pence each, one day, ———	0	3	0
Hoeing the first summer, five times, ———	0	15	0
Covering ditto in autumn the first year, —	0	6	0
Hoeing ditto the 2d summer, three times, ———	0	9	0
Covering ditto in autumn the 2d year, —	0	6	0
Hoeing ditto the third summer, twice, ———	0	4	6
To be paid in lieu of tythe, at five shillings per acre per annum, ———	0	15	0
Digging ditto out of the ground, ———	5	0	0
Total of expences, —	15	12	2
As I allow my people beer when they are about this business, I may add ———	0	6	0
Which makes the whole —	15	18	2

In the above account I have not reckoned any thing for the plants; for though they cost considerably at first, yet it is then done once for all, to any person who continues to propagate madder, as he has always a constant supply from his own plantations.

	£.	s.	d.
Produce of an acre of madder, ———	52	12	6
Expences, ———	15	18	2
Clear profit, ———	36	14	4

In the business I follow, which is that of a clothier, a great deal of madder is used in dying; and being of opinion that there are many useful discoveries now lying dormant, only for want of proper methods to bring them to light, I determined to try an experiment on madder; accordingly I took twenty pounds of the green root, and having washed it clean from dirt and filth, I bruised it in a large iron mortar, just before using,

using, and with other ingredients I dyed half a pack of wool of a dark, full drab: Upon examining my colour, I found it full as good as though I had used four pounds of the best umbro madder, imported from Holland; so that, according to this calculation, which is founded on experiment, five pounds of green madder-root is equal to one pound of dry manufactured madder; and as I have found this method to answer, I have continued to use the root in this condition ever since, and find it much the best and cheapest way; for the green root is bruised very easily in the mortar, and thereby saves a great expence in drying, pounding, &c.

Before I quit this subject, I would advise those persons who are inclined to cultivate madder, to be very cautious in the choice of land for this purpose, for hereon their success chiefly depends. Madder being a plant that draws a great deal of nourishment, consequently the richest and deepest lands are to be chosen, and such as lie pretty low; for high lands are seldom fertile.

If, by means of this letter, any of my countrymen should be excited to a laudable attempt to cultivate this useful commodity, they will probably find the directions here laid down not only useful, but necessary, as being the result of many years experience.

I am, &c.

A CLOTHIER.

ART. V. *On the Cultivation of Turnips, destroying the Fly, &c. with Remarks on the Premiums published by the Agriculture Society at Bath.*

Mr. SYLVAN,

THE Agriculture Society having offered a premium for the greatest and best crop of turnips, if you think the following directions of a method, many years practised by myself, worth inserting, they are at your service. The field or fields I mean to sow with turnips, I plough up as early as I can after harvest, ploughing it very deep, and laying my lands as round and high in the middle as I can; those lands which wet may in any shape damage, I get properly guttered to carry off the rain, as it falls; in this situation they lie to receive the winter frost, till the latter end of March, or the beginning of April, when I have all the furrows of the last ploughing thrown back; and I consider this a good and proper

per time, if the grafs, &c. looks rusty and rotten; by the time the whole of this operation is finished, and all my land fallowed down for barley, I plough my land a-cross, and this, in the ploughman's phrase with us, is called stirring; sometimes we drag the land after backing the furrows, and in light, lively land, this acts exceeding well, by breaking it to pieces, and preparing it for the plough; after the land is stirred, it is rolled and harrowed, and the couch, the principal weed we know, is carefully collected together, and either burned or carried off the land: As soon as this is done, it is again ploughed, and if necessary, as it generally, nay almost always is, it is again dragged, and then rolled; after rolling, it is harrowed, to collect what rubbish and weeds, &c. remain; nor do I cease to plough, until I can find no more couch remaining, seldom sowing my turnips with less than six ploughings, never without five. Before the last ploughing, I well dress my land from a heap of the best materials I can get into the field from harvest till the time of ploughing, consisting of dung, earth, ashes, &c. well turned and mixed together, to which I sometimes, though rarely, add lime.

I make my heap as large as possible, as what is left after dressing for my turnips, will do for my young clover; I never lay on less than fifteen good cart-loads per acre.

From the twentieth of June to the thirtieth of July, I sow my turnip-seed at different sowings, that they may not all come in at once; perhaps a week a part each sowing.

If the fly takes my turnips, I order my man, and go myself daily with a seed-lip, and a cart with wood-ashes, fetched from a lime-kiln, which have never been wetted; this we sow all over the field about three o'clock in the morning, while the dew is strong on the plant. I have hitherto found this effectual to destroy them;—I do not know what will prevent them, I believe nothing will; whatever produces, as dung, a quick vegetation is the greatest preservative.—I set my hands on to hoe the turnips very early, that is, as soon as they appear with two or three rough leaves, and do not leave them till we have separated the plants a foot a-part.—The earliest sowed require first to be eaten off; and I sometimes sow wheat after them; but though I have had tolerable crops, I do not so well approve of it as a clover of one year, because it throws us out of a proper change of crops. I hold it a bad method to sow corn after corn, for though some land will yield well in this manner, I am apprehensive it would yield better by a contrary method.

Could

Could the setting of wheat be brought into general use, I am certain that very great advantages must arise to the community, but the want of hands will always, I am afraid, be an insuperable objection to its general use; but the plough, of which you gave a plate in the Magazine for June, will answer the same purpose of saving the seed, and at the same time also save expence: I drill all tilled land for wheat, and sow my clover lay, but if I could get hands, I would certainly set it. The Farmer should have been confined to have sown wheat after the crops, No. 5, 6, and 7; on my farm, I sow winter vetches to come in before clover, and summer vetches between the first and second crops. Whether we consider them as green fodder for cattle, as crops for hay, or for seed, I have always found them profitable. I sow my winter vetches at one ploughing about Michaelmas, on land in good heart, or else with dung, and till the land afterwards for wheat; I plough three or four times for my summer vetches, and lay dung on my land before sowing; after the vetches are off, I plough three times for my wheat if I can: The same rule I observe for French wheat. Winter vetches I sow on tight land; summer vetches on my strongest land, and French wheat on light land. I seldom sow more than five acres of each sort of vetches, but I have had twenty of French wheat.

***** , Wilts.

T. L.

P. S. I send you my real name, but expect you will not discover it.

ART. VI. *Instruments necessary for a Farm of 100l. a Year.*

IF you think the following catalogue deserves a place in your useful Magazine, the insertion will oblige,

Your constant purchaser,

W. W.

STABLE.—Five horses, harness, double set for thiller, one corn bin with two or three partitions, measures peck and half peck; sieve, one chaff-bin, one chaff-basket, dung prongs, brooms, curry-combs, mane-combs, brushes, hair-cloth, whips, saddles, pads, surcingles, wanteys, pails, and hammer.

YARD.—Cow-cribs, rick-stables, wheel-barrow, grind-stone, ladders, hog-trough, wash-cistern, wash-tubs, hurdles.

CARTHOUSE.—Two waggons with head tail and side ladder, two dung and one light cart with head tail and side ladder, one wheel and one swing plough, two Suffolk ditto, to go with two

horses each, for barley and turnip season; one pair of drags, and two pair of harrows.

STORE-ROOM for every thing not in daily use.—Sacks properly marked inside and out, prongs, rakes, oat-forks, scythes, reap-hooks, feed-lips, hay-knife, hand-barrow, dibbles, hammer, nails, hand-saw, cross-cut saw, pick-axe, spades, shovels, iron crow or pole pitcher, beetle and wedges, grubbing tools, whetstone, hatchet, bill, axe, hedging-bill, leaver, weights and scales, burning mark, pitch mark, garden shears, sheep shears, cart-lines, horselocks, pincers, nail-piercers, trowels, paddles, weeding-hooks, hoes, trenching-spade, dungdrag string, awl, and needles.

BARN.—Winnowing Machine, complete, as given in the Farmer's Magazine for September, or else a fan, a skreen, and sieves, all separate; flails, shovels, rakes, prongs, brooms, sacks, bushel and peck measure and strike; caving sieves, and caving basket.

DAIRY.—Milk-pans, milk-pails, butter-churn, or tumbler, butter-prints, tray, sieve, cream-skimmer, cheese-press, vats, rennet, and cheese-strainers.

ART. VII. *Directions for managing the Kitchen Garden in March.*

SOW the seeds of cabbages, savoys, and red cabbages, for next winter's use; and plant out all your cauliflower-plants which are remaining in the winter beds, in the quarters of the kitchen-garden, for the general crop; and those cauliflower plants which were raised the last month, to succeed those raised in autumn, should now be pricked out upon fresh hot-beds, to bring them forward; but they should not be too closely covered, because it will draw them up weak, and spoil them; therefore at all times when the weather is mild, the covers should be taken off, to let them enjoy the open air, and only covered in the night, or bad weather.

Continue to put in beans and pease every fortnight, that there may be a succession of them through the season; and sow radishes, spinach, and young salad herbs, every week, to succeed those before sown; and sow some celery seeds towards the end of this month, to succeed that which was sown in February.

You may now sow parsnips, carrots, onions, leeks, beets, borage, bugloss, burnet, dill, fennel, chervil, smallage, alifanders, &c. but these should be sown early in the month, especially

cially if the soil is dry, otherwise they seldom grow large; but upon a moist soil, the middle or latter end of the month is time enough. But as the seeds of dill, fennel, smallage, and alifanders, do often miscarry when they are sown at this season, so in dry land they will succeed much better when they are sown in autumn.

The beginning of this month you should earth up alifanders to blanch them, which will render them very tender, so that in three weeks time they will be fit for use; for when they begin to shoot their stems for flowering, they are good for nothing. This is also the time for blanching dandelion, which some people are very fond to eat as a sallad herb; the plants may be procured from the fields, and planted deep into the ground, in the same manner as is practised for endive, which will blanch it in three weeks fit for use.

You may yet sow parsley, sorrel, chervil, borage, fennel, marigolds, and spinach, especially if the ground is moist; for in such land this season is better than to sow them earlier.

Slip and plant mint, tansey, tarragon, penny-royal, chamomile, baum, savory, sage, rosemary, hyssop, lavender cotton, spike-lavender, wormwood, southernwood, thyme, and most other aromatic plants, which are now beginning to shoot, and will take root better than at any other time of the year.

Your large kinds of lettuce plants, which have stood the winter in warm borders, must now be planted out into a more open exposure; otherwise they will draw up weak, and come to little, especially if they are near to walls, pales, or hedges; or where they are planted but a small distance from each other; in which cases a good part of the plants may be transplanted; and a few left remaining at a proper distance to furnish the table early in the season. You must also sow some seeds of the Sicilia, Cos, Imperial, and other lettuces, in an open, rich spot of ground, to succeed those of the last month's sowing.

About the middle of this month you must fork the asparagus beds, being very careful not to hurt the crown of the roots; but you may defer raking them smooth till the beginning of next month, whereby you will retard the growth of weeds; and that will be early enough, provided it be done before the buds appear above ground; for the only danger attending this late dressing, is the destroying of the buds.

About the beginning of this month is a good season for sowing of the large-rooted Dutch parsley; which may be sown either in open beds or in drills about a foot asunder; and, when the plants are come up, they should be thinned

so as to leave them three or four inches apart in the rows, in order to obtain good roots; or they may be sown thin on a spot of light earth, in the same manner as carrots, and hoed out; and managed as is usually practised for them, which is a right way to produce large roots.

Towards the latter end of this month you may plant new asparagus beds; if the ground be dry; but if it be wet, it will be better to defer it to the beginning of next month; for these plants always take best, when they are transplanted just as they begin to shoot. But in this you must be determined by the season, either early or late, as it may happen.

Your radishes and spinach, which were sown in January, and the beginning of February, should now be hoed, leaving them four or five inches asunder; and observe to stir all the ground between them, which will destroy all the young weeds, and greatly promote the growth of the plants; but this work should be done in dry weather.

Continue to make hot-beds for cucumbers, melons, purslane, &c. to succeed those which were made the former month; and the end of the month sow cucumber and melon seeds, to ridge out under bell or hand glasses, for the principal crop. And now the seeds of capicum for pickling should be sown, as also the tomatoes for soups, upon a hot-bed; and towards the end of the month, a few seeds of Indian cress should be sown upon a very moderate hot-bed, to bring a few plants forward, where their flowers are wanted earlier than those usually come which are sown in the open air.

Dress your artichokes, observing to leave only two or three of the clearest and best situated plants upon each root to bear, and slip the rest clean off; the best of which may be now planted to make a new plantation; and these will produce heads in autumn, after those upon the old roots are gone.

Sow cardoons upon a bed of rich light earth, pretty thin, observing to keep them clear from weeds; and, in dry weather, they must be watched until they are big enough to transplant.

Towards the latter end of this month, you may put in some kidney-beans in warm borders, where they may be defended from cold; but this must not be done in wet weather, because too much moisture, at this season, will rot them.

You should also sow sweet-majoram, thyme, hyssop, and other aromatic plants, upon a dry, warm soil; for they will not do well on wet ground.

Continue

Continue to sow all sorts of young salled herbs, twice a week, as cresses, mustard, rape, radish, &c. upon warm borders, until the latter end of the month, when they will do better in a more open exposure.

At the end of this month you may sow purslane upon warm borders, in the common ground; where it will, at that time, do well without any artificial heat, provided the season proves warm and dry. You may also at this time sow turnips upon an open spot of ground, to come early.

ART. VIII. *Recipe for the Bite of a Mad-Dog.*

MR. SYLVAN,

SOME months ago the foreign prints informed us, that the King of Prussia had purchased, from a peasant in Silesia, the receipt for making up a remedy to cure the bite of a mad-dog, which the latter had been happy enough to discover, and which he administered for several years in the neighbourhood of his village with the greatest success, and benefit to the people.

Not being a physician, and consequently unacquainted with physical terms, I thought myself unequal to the task of explaining it to the public, and waited to try if some of the faculty would think proper to communicate it to the nation; but as no such thing has been done, I should think myself an enemy to mankind were I any longer to defer communicating a remedy from which such salutary effects may flow. The public will overlook, I hope, the awkward manner in which I have translated a subject on a matter quite foreign to my profession, and forgive the faults for the sake of the intention.

I will first give a description of the insects that form a part of the recipe; next, the manner of making it up; and lastly, the mode of treating the patient while under cure.

The May-Worm is an insect which Linnæus classes with the coleopteres, and calls it *moloe*: Of these there are two kinds; first, the *moloe proscarabæus*, or *anticantharus*; it is about the thickness of a finger, and sometimes an inch, and a half long. The female is larger than the male; it has no wings, but little coverings, like wings, which cover only half the body; they are soft and smooth as Spanish leather, black and pointed, and have no glossy hue. This insect does not fly, but walks slowly; the whole body is generally soft, and usually black, but variegated with blue, green and yellow; the head, feet, and belly, are more inclined to red than violet. If this insect be put into oil, it expires instantly. It has something

thing very peculiar to itself, which is, that if it feels itself touched, there immediately distils from every joint of its body an oily glutinous matter, of a yellowish colour, which makes the fingers that touch the insect, stick to each other. This glewy substance, and indeed the whole insect, emits an agreeable smell when crushed.

The second species of May-Worm, and indeed the only one that rightly deserves that name, is the *moloe maialis* of Linnæus. This insect is smaller than the former; it has little red rings round the inferior part of its body, which distinguish it from the former; it likewise distils an oily substance. They are the two principal ingredients in the salve, or ointment, for curing the bite of a mad dog. They are generally found in meadows and places most exposed to the sun; the time for gathering them is in the month of May.

As they distil their liquor at the least touch, and that the remedy can be of no use if the liquor is lost, they must be taken up on little twigs as they are crawling over them, and put into a glass or small pot, but without being touched with the fingers. When they are brought home, their head is to be cut off with sharp scissars, over a vessel that has honey in it, without losing any of the above-mentioned liquor, which must flow into the vessel that contains the honey; the body of the insect is then to be thrown into the vessel, which must be shut up. These insects may be preserved this way for two or three years, taking care always to put in fresh honey according as it is wanting.

Two hundred of the black worms, or one hundred and fifty of the others, which are of a golden colour, will suffice for a quart of honey (Berlin measure.) The vessel must be kept closely shut, in a place neither too hot nor too cold.

R E C I P E.

Twenty-four May-Worms preserved in honey; six drams of treacle, or marmalade of juniper, if there is no treacle to be had; two drams of cedar wood; one dram of the root of Virginia dragon wort; one dram of filings of lead; twenty grains of the agaric of the service tree, to which add a little of the honey in which the insects have been preserved.

The following is the manner of preparing and using the remedy in question:

When you have taken the insects out of the honey pot, put them on a plate, and press them with the point of a knife till you have reduced them to a kind of paste; then put the

the treacle over them; next grate the cedar wood into a very fine powder, which must be sifted before it is put into the composition. The dragon-wort is likewise to be reduced to powder; and the lead must be filed as small as possible. The whole is to be well mixed and blended together, till it becomes a kind of mass or marmalade; you must work it with some of the honey in which you have steeped your insects, and knead it very well.

When you have prepared it, you may preserve it in a glass tumbler or a gally-pot, which must be kept close covered.

It is better to make but little of this preparation at once, as it is liable to grow mouldy, which deprives it of its virtue.

METHOD of USING the PREPARATION:

To men from twenty-five to fourscore years of age, give two drams of it; to women of the same age, one dram and thirty grains. Under twenty-five years, one dram thirty grains for men; for women, one drachm fifteen grains. Under fifteen years, one dram for males; fifty grains for females. From six to ten years, forty grains to males, thirty to females. From three to five years, thirty grains for males, twenty-six for females. From one to two years, twenty-four grains for males, and twenty for females. When an infant on the breast has been bit by a mad dog, it is the nurse that is to take the remedy.

For horses and horned cattle, three drams, thirty grains, to be divided into two equal parts; the one to be taken in the morning, the other at night. For young calves or foals one or two years old, one dram, forty-five grains; for those only a few weeks old, one dram. For pigs, two drams, thirty grains; for those of a middle age, one dram, fifty grains; and under that one dram. For sheep and goats, one dram fifty grains, kids and lambs one dram. For dogs above two years old, two drams; above eight months, one dram thirty grains; under eight months, one dram ten grains. For poultry, thirty-five grains.

The following is the regimen to be observed during the operation of the remedy:

When the person who has been bit by a mad dog has taken the dose appointed as above, he must abstain from eating twenty-four hours, and from drinking twelve. If at the end of twelve hours he feels himself tormented with thirst, give him some elder or juniper tea; if neither can be had, give him some India tea.

The

The patient is not to take the air from the time he takes the remedy till he is cured; he must sweat in a temperate apartment, and remain in bed the twelve first hours. At the end of twenty-four hours, put a clean shirt on him, and burn the one he sweated in, as the sweat is then contagious. If it is winter time, the apartment must be kept warm.

If a wound has been made by the bite, wash it with wine, or vinegar, in which a little salt is to be put; if no vinegar can be had, take water in which salt has been dissolved. This water should be warm, and the wound washed with it several times a day, and dressed with basilicon and new made butter, well salted; you may add some dragon's oil, or some of the insects already mentioned. After the cure, the patient must abstain from all strong liquors, violent motions, and every pleasure that might heat him.

As for cattle that have been bit, they are to be set apart, and not suffered to go out into the air for twenty-four or forty-eight hours, in which time the remedy generally effects a cure, though it sometimes takes a longer time. They are to be afterwards put into another stable; and the one in which they remained during the treatment, is to be well cleaned and purified. They are to get nothing to eat during the first twenty-four hours, nor to drink for twelve. The wounds are to be treated in the same manner as is above prescribed for men. Those who take care of the patients or beasts, should also take some of the remedy, in order to preserve themselves from catching the infection. If, instead of a wound, there is only a bruise, still the same precaution must be taken as for wounds.

All the surgeons and apothecaries in Prussia have received orders to be always provided with this remedy, that those who may not be able to make it, may always know where to find it ready made.

PHILANTHROPOS.

ART. IX. *Remedy for the Grease in Horses.*

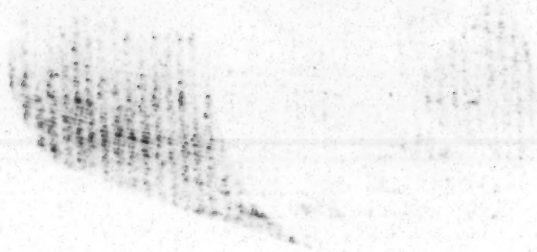
AS I am a great lover of that noble and useful part of the creation, a Horse, am glad to have this opportunity of obliging the public, and to be serviceable to that noble animal, by giving a receipt, founded on my own experience, for the cure of the grease in a horse's heels.

Your's, &c.

PHILO-EQUUS.

The

James G. Thompson



James G. Thompson
with children

The greafe, in my opinion, proceeds from some internal (though occult) caufe, arifing from an indisposition of the animal juices, and therefore bleeding and rowelling is very neceffary. Wash the horfe's heels twice a day with water, bran, and a little hog's lard boiled, as hot as the horfe can well bear it.—When washed thus for a few days, give him about a pint, once a day, of the following draught; liquorice root three ounces, fhavings of guaiacum two pounds, crude antimony, (grofsly powdered, and tied up in a linen cloth) one pound; boil it about an hour in ten quarts of water, and keep the decoction on the ingredients in an earthen vefsel. Whilst you give him this liquor, anoint his heels with the following liquor twice a day; honey one pound, verdigreafe four ounces, crab vinegar fix ounces, boiled till it appears of a dusky brown colour, to which then add roch-allum, myrrh, and fal-ammoniac, of each half an ounce; boil it yet a little longer, mixing it well together. As I am fully perfuaded that moderate exercife, and lying down in the ftale, greatly accelerate the cure, I would therefore recommend (if found neceffary) the very method you mentioned in your Magazine for January, p. 33, as it is a safe and eafy one.

ART. X. Reference to the Copper-plate of the Garden Roller.

THE Garden Rollers of which a plate is given, are cylinders of caft iron, with double wrought iron croffes, and a balance weight in each cylinder; and they are fo truly turned in a lathe, that the divifion line between them is hardly perceptible when put together.—The ufe of them is obvious whenever the ufer has occafion to turn round, for then the one advances whilst the other retires, fo that there is not the leaft grinding or friction to injure the face of the walk.

They are now very much approved of, and are getting apace into general ufe. They are made and fold by Mr. Sharp, ironmonger, Leadenhall-ftreet, London.

ART. XI. Letter from a Member of the Bath Society.

Mr. SYLVAN,

IT gives me very great pleasure to find that the Bath Agriculture Society entertain fo high an efteem for your Magazine as they do. It well deserves not only the notice of them, but alfo of every Society in the kingdom, while you continue to

make it useful to the Farmers, and adhere strictly to your plan;—to hasten the publication of the Dictionary part, I, as well as many more, wish you to give two half sheets a month. I hope Mr. Williamson will continue his valuable practice, and finish the whole by account of Debtor and Creditor, fairly stated; in doing this, he will confer an obligation on thousands, as he certainly writes from experience, and a thorough knowledge of his subject; I wish he would also send you more letters on the diseases of cows, or else publish the whole of his receipts together in a separate work, as we have nothing besides to be depended on.

A MEMBER of the BATH SOCIETY.

ART. XII. *Answer to the Arithmetical Question proposed in our last.*

LET the price of one pound in farthings be represented by A, and the price of one hundred weight in shillings by B; then, twice so many shillings, and once so many groats as there are farthings in A, will be represented by $\frac{2}{3}A$, which make equal to B; therefore $\frac{3}{2}B$ will be equal to A, which gives this general rule, viz. Three-sevenths of the price of an hundred weight of any commodity in shillings, (reckoned as so many farthings) gives the price of a pound in farthings.

E X A M P L E.

How much per pound is three guineas per hundred.

Shillings in three guineas, = 63

Multiply by 3

7) 189

$\frac{2}{3}$ of which = 27 farthings = 6d. $\frac{3}{4}$ the price of one pound.

ART. XIII. *Letter from a Member of the Sussex Society.*

Mr. SYLVAN,

THE Society for the encouragement of Agriculture in Sussex, having adjudged a premium to James Dalrymple, esq; of Mayfield in Sussex, for his mode of cultivating Potatoes, and also another premium to the Rev. Henry Poole, for the earliest green food for cattle; I have no doubt but the publication

lication of the result of their experiments in your useful work, will be highly acceptable to numbers, as well as,

Your constant reader,
A MEMBER of the SUSSEX SOCIETY.

Mr. Dalrymple's experiment was on three acres, in a very bad condition, and so foul with the rankest Couch Grass, that he did not think it could be cleared by a summer fallow. In April trenches were made four feet asunder, as deep as the common round plough would go, first going down, and then returning in the same furrow; the Potatoes were then planted and covered with dung, and men with hoes turned the earth over them. As soon as the Potatoes were about five inches above ground, the earth was turned by a plough towards the centre of the interval, and about a fortnight after turned back again, which levelled the ground; the intervals were then harrowed by an edget, and three waggon loads of Couch Grass carried off, the land, however, was by no means clean. Then the earth was ridged up with a plough to the Potatoes near a foot high, which caused them to grow so fast, that their tops soon touched and smothered all the remaining weeds. Being perfectly clear the beginning of last October, the field was sown with Wheat. The crop of Potatoes was after the rate of three hundred bushels per acre. The soil, light loam.

Rent, taxes, ploughing, harrowing, hoeing, seed *l. s. d.*

Potatoes, digging the Potatoes, and every other

expence, amounted to per acre, ——— 3 5 0

Three hundred bushels, at 18d. ——— 22 10 0

Expences, ——— ——— 3 5 0

Clear profit per acre, ——— ——— 19 5 0

The Rev. Mr. Poole's experiment was on upwards of two acres of cold clay. The course as follows: The land being well manured, first bore a good crop of Potatoes, and the next year a crop of Turnip cabbage. The third year, without more manure, being ploughed three times, it was sown the second week in September, 1775, part with Winter Tares and Rye, part Winter Tares and Rye-Grass, and part Rye and Rye-Grass. Mr. Poole does not recollect the quantities sown. The growth of the Tares and Rye was very luxuriant, and mown at New Lady-tide. Cows and horses were foddered with it; and before the whole was cut, the part first mown was fit to cut again. It was mown green twice more during the summer; and the fourth time, (in August)

when ripe, it was carried into a barn, and thrashed out for food for poultry.

The Rye-Grass and Tares were not fit to cut till towards the end of April, but then the crop was very large. It was mown only twice.

The Rye and Rye-Grass were scarce worth mowing once.

Rye and Winter Tares should be sown early in September, (the Rye very thick) which gives them time to grow sufficiently to shelter each other during the winter, and help each forward in the spring. The Rye, especially, shelters the Tares. It should be mown before the Rye grows too rank or stalky. Two young milch cows, with their first calves, that had been constantly at hay, were fed with the Tares and Rye: They thrived fast; and the quantity of milk increased in a week from four to near ten quarts.

ART. XIV. *Observations on the Heats of different Climates, on the Vegetation of Plants, &c.*

[From ANDERSON'S ESSAYS relating to AGRICULTURE, &c.]

FROM not duly attending to this variation that necessarily takes place between the nature of the climate of an extensive continent and that of a small detached island, many have been disappointed in their hopes of rearing several American trees and shrubs in Britain; and have been much surprized to find them killed by our winter's frosts, seeing they suffer every year, in their own climate, a degree of cold much more intense than we ever experience, without sustaining any damage from it. But, although the winter's cold be there indeed much more intense than with us, it is likewise more invariable, and the season in every respect more constant; so that there,—from the time that the vegetation is stopt in autumn, till it begins again vigorously in the spring, the sap is never once put in motion;—whereas, in Britain, the mild weather that we frequently experience in the middle of winter, very often swells the buds at that season, which gives them such a tender sensibility as makes them unable to resist the severe frosts that often follow: so that they, on this account, perish with us entirely, although they were capable of resisting a much more intense degree of cold in their own native climate.

Many likewise have been much disappointed, at finding the roots of certain garden-plants killed by the winter frosts in
Great-Britain,

Great-Britain, which are seldom hurt by the much more intense cold that is experienced in Russia, and many parts of Germany, from whence we have endeavoured to introduce them; by not having sufficiently adverted to the difference of the two climates:—As in these cold continental countries, the earth is constantly covered with snow, from the beginning of winter, till the genial heat in the spring melts it; by which means, they are more effectually preserved from the intense cold, than by any other covering that we could give them; inasmuch that grass advances, and flowers spring up, under its protection, so as to appear in full blossom as soon as it is dissolved.

From these observations, it appears evident that we cannot in all cases promise, that a plant will not be killed by cold in one country, although it should chance to be a native of one that is colder:—Nor can we always be certain, that a plant which comes to perfection in a temperate, or even Polar climate, will meet with warmth sufficient to ripen its seeds, even in an equatorial region. Thus wheat,—barley,—and other kinds of grain, that rush up with rapidity, and soon attain perfection in temperate climates, can hardly at all, or with great difficulty, be brought to ripen their seeds in the torrid zone.—For, in these last regions, although the heat of the day is very intense, yet the length of the night that constantly succeeds it is so great, as tends much to retard the maturation of the grain, at the same time that the copious dews, that these long nights always produce in warm climates, are so greedily imbibed by the succulent leaves of these plants, as endows them with prodigious vigor to advance in length with the heat of the day; so that the plants are urged on to grow to a prodigious magnitude. And it is so long before the ear begins to be formed, that ere ever it can be brought to maturity, the tender stem becomes unable to support the vast load that it has to carry; and the rainy season approaches before the seeds can be ripened; which effectually destroys the whole plant.—But in regions that are placed nearer the pole, as the day is so much lengthened during the summer season, the night hardly gives any check to the vegetation at that time; and, as the dews are necessarily less abundant, the plant has not such a tendency to an over-luxuriance of growth; and the constant action of the sun soon disposes it to push out its flower-stalks, so that the seeds attain maturity with a rapidity unknown in these warmer climates.

By properly attending to these peculiarities of different climates, and to the nature and particular œconomy of the plants
or

or animals that he wishes to rear, a man may have a tolerable guess whether or not he may hope for success in rearing plants in one country that are brought from another.—Thus, it will readily occur to any person in the least versant in this subject, that it would be in vain to expect to be able to rear any of the trees peculiar to equatorial regions in the open air, within or near the polar circle. Because, as there is *almost no variation* in the heat of different seasons in the first named regions, it is probable, that such perennial plants as are natives of it would be incapable of bearing any considerable degree of cold, which they cannot fail to meet with in the last named regions; so that there is the greatest reason to think they would all be killed at the very first approach of winter.

But there is not so much reason to despair of being able to rear to perfection, in high latitudes, some annual plants that may be natives of equatorial countries. For, if these plants require but a short time to attain perfection in their native climate, it is not at all impossible but they may ripen in the other during the summer season, before the cold weather of autumn approach to kill them. And, accordingly, we find that several annual flowers from these regions have been introduced with success into our gardens; and probably other useful plants, if equally attended to, might have been cultivated by us with equal success.

The Potatoe, which has of late been reared with such happy success in all the northern parts of Europe, sufficiently evinces the justness of this remark: For it is a native of a very warm climate, and is as impatient of cold as almost any plant we know;—yet, as the length of our summer sufficeth to bring it to perfection before the frosts approach, we are enabled to cultivate it with the greatest advantage. Whether the Yam, another West-Indian root, nearly approaching to the nature of the potatoe, could be reared with the same facility in Europe, seems to me a little doubtful; as it requires a longer time to arrive at perfection in the West-Indies than the potatoe. But, it is probable, that many plants whose value consists in their leaves, and not a few whose roots or seeds are most esteemed, could on some occasions be introduced with success into Europe or the American continent, were the peculiarities of their growth duly pointed out, and sufficiently attended to.

But, it is not in all cases enough for the Farmer to know that plants will live in the country he inhabits. Before he attempts to rear them, it is likewise necessary that he should know,

know, if his situation is such as, with an ordinary degree of care, puts it within his power to attain, all those peculiarities that seem to be necessary for the well-being of that particular plant he means to cultivate. For a diversity of climate often produces a much greater variation in this respect, than most people seem to be sufficiently aware of.

Thus, in warm countries, such as Portugal, Spain, and Italy, the heat of the sun becomes so intense during the summer-months, that all the common superficial fibrous-rooted grasses are totally destroyed; so that the common pasture-grasses are withered, and the fields become bare and parched up at that season, unless where artificially watered; insomuch, that the inhabitants are often, from this cause, subjected to great inconveniences for want of food to their bestial. It was therefore an object of the utmost importance to them to discover a plant, that could be made to live and thrive at that particular season, and furnish an abundant and wholesome food to their domestic animals.

Such a plant they have happily discovered in the Lucerne; which, by sending its roots to a great depth in the soil, continues to find there moisture sufficient to preserve it in a degree of vigorous vegetation when all the common grasses are totally destroyed. No wonder, therefore, that the inhabitants of these countries should consider this as one of the most valuable blessings that heaven, in its abundant bounty, hath bestowed upon them, and never have done with its praises.—But, in our more temperate climate, as we do not stand in such need of a plant of this sort; so neither do we find ourselves in a situation that admits of the culture of it with so much advantage. For here, the moderate heat of our summers, and the frequent gentle showers that we then have, are so exceedingly favourable to the growth of the common fibrous-rooted grasses, that every unoccupied spot becomes quickly covered with them; and they spring up so close upon one another as to choak every other plant that is not so hardy and luxuriant as to over-top and destroy them. Now, although it is found that the Lucerne plant will live and thrive extremely well in our soil and climate, if it be kept free from these numerous weeds; yet, it is by no means capable of destroying, without assistance, that immense quantity of grassy plants that constantly spring up around it here, and stint it in its growth, and at length totally destroy it, unless we were at pains to free it from this its most destructive enemy; which adds very much to the trouble and expence of cultivating the plant in our climate, and prevents

us from having it in our power to rear it with success in that easy promiscuous way of sowing it, that may with safety be practised in those climates where nature performs the part of the gardener, and frees it more effectually from this particular weed, than any care or trouble with us could ever effect.

ART. XV. *On raising Trees from Seed.*

[From Lord KAIME'S GENTLEMAN FARMER.]

THE propagating trees by seed is nature's method. One inconvenience it has, that the trees thus raised are not always the same with the parent plant; though they are of the same species, they copy not always its varieties.

What follows will enable us to judge of the maturity of seed. Seed inclosed in a *capsula*, in a pod, or in a cone, is ripe when the covering opens by the heat of the sun. The seed of a fruit-tree is ripe when it no longer adheres to the fruit; and where unripe fruit is pulled, the seed ripens with it. In general, seed is ripe when it sinks in water to the bottom.

The seed of the Scotch elm ripens before the middle of June. The best way of gathering it is, to shake the tree gently; the ripest seed falls first, which may be gathered in a sheet laid at the root of the tree.

The seed of the ash and of the maple may be put into the ground without being taken out of its *capsula*.

The best way of opening the cones of pine, fir, &c. is to expose them in boxes to sun and dew. The drying them in a kiln is apt to destroy the germ. The cones of the larch are at their full size in autumn: but the seed is not so early ripe. Delay gathering them till March or April, when they begin to drop from the tree. Cut off a part of the cone next the stalk, which will render it easy to separate the quarters; the ripest seed falls out upon shaking the cone with the hand.

The seed of the birch, the willow, the poplar, the alder, being very small, is not easily gathered; stir the ground about these trees, and it will soon be filled with young plants. With respect to the seed of the birch and ash, it is singular, that when dropt from the tree, no seed takes root so readily; yet when gathered, and scattered with the hand, it seldom grows.

As for a choice of seed, small acorns gathered from large and lofty trees, are preferable before the largest acorns of smaller trees. In general, the seed is always the best that is procured

procured from the most vigorous trees. But as in extensive plantations much precision cannot be expected, it ought to be the chief care that the seed be perfectly sound.

Next, as to preparing seed for sowing. Trees propagated from seed have all of them a tap-root, which pushes perpendicularly downward. The purpose of nature in this root is, to fit trees for growing in the stiffest soil, and to secure them against wind; but it proves hurtful to trees intended for transplantation. A young oak five or six years old, when taken up for transplanting, has, like a turnip, but this single root, which will be four or five feet long when the stem is within one foot. Planted in this manner, it seldom lives. This evil is prevented by making the seed germinate in moist earth, and sowing it in the seed-bed after the radicle is cut off. The radicle never pushes more; and instead of it the tree pushes out many roots, which spread horizontally. Walnuts, almonds, and other shell-fruit, being long of germinating, ought to be put in moist sand, in order that the radicle may push before the end of April, to be cut off as aforesaid. Acorns, chestnuts, and beech-mast, will germinate timeously in dry sand. In wet sand or moist earth, they would, before the time of sowing, not only germinate, but push out long roots, which would ruin all. As this method is too troublesome for small seeds, sow them in beds as gathered; pull them up the second year; cut off the tap-root; and plant them again at the distance from each other of three or four inches. Two years after, they may again be transplanted wider; there to remain till they be fit for the field. Some imagine, that to deprive a tree of the tap-root prevents its growth. But experience vouches the contrary; and so does reason. It is observable, that the roots next the surface, being accessible to sun and moisture, are always the most vigorous, and are farther spread than those below. A tap-root is deprived of sun and air, and even of water, unless where it happens to glide below the surface; how then can it equal an horizontal root in nourishing the tree?

The seeds of the white thorn sown without preparation, rise not till the second year. If buried under ground in a heap till the pulp be rotted off, and sown in the spring following, they will germinate that very year. Instead of burying them under ground, a more approved method is, to lay them in an heap at the end of a barn, mixed with earth. By that method, a greater number will germinate than in the ordinary way. I made an experiment. One bed was sown with haws prepared in the ordinary way, and one with haws prepared

in the other way. Upon the latter bed sprung a double quantity of thorns, and more vigorous. I made another experiment upon elm-feed. Of a quantity gathered when ripe, the half was immediately sown; the other half was carefully dried in the shade, and sown a fortnight after. The latter produced a greater number of plants, and more vigorous. Thorns are propagated still more expeditiously by cuttings from the root. When thorns are taken from the nursery to be planted in a hedge, the roots that are either wounded by the spade, or too long, must be cut off. Let these be shred into small parts, and sown in a bed prepared for them; they will produce thorns that very year. The seed of the ash seldom germinates till the second year. When gathered in the month of October, let it be put in pots with earth, and sown in the spring; it will germinate immediately. The ordinary way of raising hollies, is to sow the berries entire; which is wrong: Every berry contains four seeds; and the plants that spring from them are so interwoven, as not to be separable without injury. A better way is, to gather the berries in December, the later the better, if they can be saved from birds. Throw them into a tub with water, and between the hands rub them carefully in the water till all the pulp falls off. The good seed will sink to the bottom, which, after the water is poured off, must be laid upon a cloth to dry. Mix them with dry sand, which will preserve them all the winter. Sow them in March or April, and cover them with earth about three-quarters of an inch thick.

With respect to the time of sowing, the best rule is, to imitate nature, by sowing when the seed is ripe; provided the tree be of a hardy kind to endure the frost of winter. By this rule, the seed of Scotch elm ought to be sown in June; the seed of pine and fir in April, at which time their cones open. Acorns, chestnuts, and beech-mast, ripen in autumn, which is the time of sowing them. If they ripen later, it is more safe to sow them in the spring following; because the young plants cannot resist frost, if before winter they have not acquired some degree of vigour. There is another reason for storing up these seeds till spring; which is, that the longer they be in the ground, the greater risk they run of being destroyed by vermin. As the white-thorn vegetates early, the haw ought to be sown the first dry weather in February, after being separated by a wire sieve from the mould with which they were mixed. Avoid fresh dung, which is injurious to them. Sow the seed of the larch when taken out of the cone in March or April;

April; for though in the cone it will stand good for years, yet it does not long retain its vegetative quality when separated from the cone.

Next, as to the manner of sowing seed. Nature drops seed upon the surface of the ground. We must depart from nature in this instance, upon the following account, that after much expence and trouble in procuring seed, the far greater part would perish, partly by vermin, and partly by an inclement air. This is not regarded by nature, which is profuse in the production of seed. All seeds therefore ought to be covered with earth, birch-seed alone excepted, which ought to be pressed down with the back of the spade, but left open to the air without covering. Small seeds must be slightly covered, as having less vigor to push upward. In strong soil, the covering ought in every case to be slight. The depth is pretty much arbitrary, because the same seed will thrive at different depths. But it must be attended to, that a slight covering exposes the seed to drought; and therefore the ground ought to be watered if the season be dry. Where the ground sown is too extensive for watering, a crop of barley will preserve the tree-seed from the sun, and also prevent weeds. The tree-seed and the barley may be sown alternately in lines. If trees are intended to remain where their seed is sown, it is proper to sow thick, partly for shelter, partly to keep down weeds. M. Buffon declares against weeding the ground upon which the seed is sown: "For," says he, "weeds shelter the young plants from the sun, keep in the dew, and preserve the plants warm in winter." In Scotland, nothing is more hurtful to plants than weeds, which choke them, and exclude the air. A better way, even in France, is to sow barley with the seed, which will protect the young plants from the sun, and admit the air.

[To be continued.]

ART. XVI. *Advantageous Effects produced by Volatile Alkali Fluor in the Bite of a Viper.*

[Translated from the French of M. SAGE.]

THE venom of the viper resembles in colour and taste the oil of sweet almonds; it is contained in vesicles which are found under the reptile's teeth, when it raises them to bite; the vesicle being then compressed, the poison insinuates itself by the longitudinal groove, situated on the concave and internal part of the tooth.

From the experiments in the *Experimenta circa varias Res naturales*, by Francis Redi, we learn, that the poison of the viper produces no mischief when swallowed even in a large quantity. This author reports, that one of those men whose business it was to collect vipers, named Jacob Sozzi, took before an assembly of learned men one spoonful of the venom of vipers without receiving any injury; he also drank wine in which he had received the poison of many irritated vipers, without being sensible of the least bad effect.

Francis Redi soon after repeated nearly the experiments; he put into a glass of water the heads of four vipers still half alive, whose lips and palate he had scratched with a lancet; he divided into two parts this unpleasant beverage, and gave one part to a goat, and the other to a duck; but the poison did not seem to produce any sensible effect.

We know from experience, that many things, perfectly harmless when taken into the stomach, become violent poisons when received either at an incision or where the vessels of the skin are torn or wounded, and they immediately pass into the blood.

Cartheuser relates in his *Materia Medica*, that the wounds of arrows dipped in the juice of black hellebore are mortal, although a decoction of the same plant, taken by the stomach, only produces a gentle purging, and when continued occasions no bad effect.

M. de Paw, when treating of the poisoned arrows of the Oroonoko Indians, says, "When a savage is about to make use of his poisoned arrows, he takes care to moisten them with his saliva, and puts them into his mouth without fear; for the poison with which they are armed, only acts when it is mixed with the blood, which it suddenly coagulates; the wounded animal drops down dead with more precipitation than if a stream of aqua-fortis had been injected into the veins, which poison has likewise the property of fermenting the blood, and rendering it grumous even in the auricles of the heart in less than two minutes." After this it is easily perceivable, that there is no danger in eating the game killed with those envenomed arrows. *Recherch. Philosoph. sur les Americains. tom. ii. p. 244. et seq.*

Those acids which, when taken internally in small quantities, are often salutary, produce the most violent disorders in the animal oconomy, and even death itself, when they pass immediately into the blood: if a few drops of them be injected

jected into the veins of an animal, it falls into convulsions almost immediately, and its death follows in a very short time.

We are indebted to Dr. Mead for the discovery of the nature of the viper's poison. Though this poison be not sensibly acid to the taste, the experiments of that able physician shew, that an acid is contained in it, which separates spontaneously when the poison is exposed to the air.

Dr. Mead relates, that after having put on a plate of glass some poison of vipers which he had provoked, and caused to bite a hard body, he examined it by the help of a microscope, and immediately perceived some saline particles rapidly floating in the liquor; after some time these were formed into very slender, and extremely sharp-pointed crystals, on which were observed a kind of knots; these crystals were transparent, and gave a red colour to the tincture of Turnsol, but made no alteration in that of blue violets. This last property is found in the marine volatile or mephitic acid, which is known to change the colour of the first of those tinctures into red, while it produces no alteration in the other.

When the viper bites, it introduces its poison into the wound; which insinuating itself into the vessels, by degrees coagulates the blood, interrupts the circulation, and brings on death, unless a remedy be applied.

It has been remarked, that small animals die sooner than large ones, when bitten by the viper; and those which received the poison from the viper itself, than those into whom it had been introduced by means of an incision. Some pullets, which died of a bite, have been eaten by men without inconvenience; which is conformable to the account I have given above from Mr. Paw, of the game killed by the poisoned arrows of the Americans.

Dr. Mead had demonstrated that the venom of the viper was acid; though the application of the remedy seemed naturally to flow from the knowledge of this, it was reserved to Bernard de Jussien to make the first experiment of it.—We find in the memoirs of the academy of sciences for the year 1747, the use made of volatile alkali by that celebrated botanist, on a person that had been bit by a viper in three places, viz. the thumb and fore-finger of the right hand, and thumb of the left. He felt almost immediately a numbness in his fingers, which swelled; the swelling spread to his hands, and became so considerable, that he could not bend his fingers. M. de Jussien made the patient take six drops of volatile alkali in a glass of water, and a quantity of it was poured upon each wound,

wound, sufficient to bathe and rub into it; it was then one o'clock in the afternoon, and extremely hot weather; at two the patient complained of a sickness at his heart, and fainted away; but it ceased on his taking a second dose of the volatile alcali.*

The same remedy was again administered to the patient at different intervals, both externally and internally. Next day the swelling of his hands still continuing, an embrocation was applied of olive-oil, in which was mixed a small quantity of volatile alcali. The effect of this remedy was so speedy, that half an hour after the patient could freely move his fingers. At the end of eight days he was entirely cured; the swelling and numbness of his hands, and a yellow tinge which on the third day appeared on the fore arms, were dispersed by the use of the volatile alcali, of which he took two drops in a glass of water three times a day.

That the application of volatile alcali may be successful in the bite of a viper, it must be made almost immediately, which I have verified by exposing pullets to be bitten by vipers. Those to whose wounds I did not apply the volatile alcali till half an hour after the bite was given, died in some hours; but those to which I immediately applied a compress of the alcali, recovered. It is proper to observe, that I did not administer volatile alcali internally to those pullets.

The dose ought to be proportioned to the strength and size of the animal: perhaps, so large a quantity as a dram might be administered to oxen; but the most essential part is the application of compresses to the bites, and, if the swelling be considerable, embrocations.

* This second dose was given in wine; but the volatile alcali combining with the acid in that fermented liquor, the wine grows black, and keeps the sal-ammoniac in a state of dissolution; the alcali therefore ought to be taken only in water.

ART. XVII. *An excellent Oil for Strains of the Sinews, and Shoulder-Ships.*

TAKE linseed-oil, four ounces; oil of spike and turpentine, of each two ounces; of nerve oil, an ounce and a half; oil of Exeter, and swallows, of each an ounce; oil of Peter, six drams; oil of vitriol, two drams and a half. Mix them together for use.

POETRY.

P O E T R Y.

The P A R S O N S. AN ECLOGUE..

[By a COUNTRY CLERGYMAN.]

A SMALL neat house, and little spot of ground,
Where herbs, and fruits, and kitchen-stuff were found,
The humble vicar of North-Wilford blest,
Small was his living—but his heart at rest.
Unseen, unblam'd, he pass'd his time away,
He smok'd, or wrote, or mus'd, or walk'd all day;
Through all the year no anxious cares he knew,
But just at Easter when he claim'd his due:
And then the sultry rustic's churlish pride,
His well-earn'd tythes, disputed or deny'd.
The vicar still, preferring want to strife,
Gave up his due—to lead a peaceful life:
His garden once in pensive mood he sought,
His pipe attended as a friend to thought;
And while the smoke in eddies round him play'd,
A neighb'ring vicar ent'ring he survey'd;
One like himself, a downright honest priest,
Whose scanty dues the love of peace decreas'd.

Suppose the little ceremonies done,
And all the rights of lighting pipes begun;
Suppose the whiffs in sober sort flow round,
And both in musing very deeply drown'd:
For so it was—till thus the first good man
Fetch'd a deep whiff, and anxiously began.

FIRST PARSON.

Would God, (my friend) his goodness had assign'd,
Some lot more suited to my feeling mind;
Lest tho' my income, if from torture free,
Content would well supply the place to me;
For all the pence, the little dues I glean,
Or raise my scorn, my pity, or my spleen:
I'll tell thee—but e'en now a neighbour came,
Pale want diffus'd o'er all his meagre frame;
Five-pence the sum, he gave a shilling o'er,
Kind, shook his head, and wish'd he could do more:

I turn'd

I turn'd away, nor could from tears refrain,
 'Twas death to take it—to refuse it vain.

SECOND PARSON.

Such gentle manners more afflict the mind,
 Than the rough rudeness of the baser kind:
 Just ere I came, a rustic braggart elf,
 Proud of his purse, and glorying in his pelf,
 Approach'd, and bold demanded what to pay?
 What claims the priest whom we maintain to pray?
 The account he gave me of his stock, I knew,
 Was half curtail'd, and scarce one number true:
 Howe'er, my silence favour'd the deceit,
 And, fond of quiet, I conceal'd the cheat;
 Yet when the small, the half demand I made,
 He bully'd, swore, and damn'd the preaching trade;
 All God's good household with irreverence curst,
 And me, with four abuse, as far the worst:—
 Thou know'st my friend, what agonizing smart,
 Such brutal outrage gives a tender heart.

FIRST PARSON.

Too well, alas! too fatally I know—
 From whence these complicated evils flow;
 From tythes, from tythes, the Clergy's woes arise,
 They mar religion, nay, they rob the skies:
 Wou'd God, our Monarch's ever-gracious hand,
 In this wou'd deign to bless the wretched land:
 Wou'd God, the tythes like taxes might be paid,
 A fix'd revenue by some statute made;
 How then would blest religion rear her head!
 How thro' each village kindly virtue spread!
 What souls with heav'nly comfort would be blest,
 How happy then, parishioner and priest!

Thus of true grievances the priests repin'd,
 And with their own, spoke all their brethren's mind;
 When toll'd the bell, and to the church slow mov'd
 Six virgins, bearing one that dy'd for love:
 The grave debate was silenc'd by the bell,
 The vicars rose, and kindly took farewell.—
 The first, his sermon seeks, and hastes away,
 The last sad duties to the dead to pay;
 From love he much advis'd the youthful throng,
 Drew tears from all, and pleas'd, tho' preaching long;
 While slow, his brother, on his easy pad,
 Pac'd home full grave, and ruminating sad.



T H E
FARMER'S MAGAZINE.

MARCH, 1778.

A DISSERTATION on the Progress and present State of
AGRICULTURE. [Continued.]

American Husbandry.

CHILI. **T**HE most important province depending on Peru, is Chili. While Pizarro was carrying on his designs in Peru, Almagro marched into Chili, and was successful in his undertaking, till he was recalled to the siege of Cusco, by which means he left his conquest incomplete.

On the death of Almagro, who fell a victim to the arts and resentment of Pizarro, Pedro de Valdivia was appointed general, and sent to finish what Almagro had begun. Accordingly he advanced into the country, and meeting with little opposition, he spent his time in building towns and villages. His conduct was so agreeable to the president of Peru, that he was appointed governor of Chili, in 1548. But though he met at first, with very little opposition from the Indians, he found as he advanced farther into the country, that the inhabitants were not at all inclined to part with their liberty. Several bloody skirmishes ensued, in which the natives were always defeated, and great numbers of them submitted to the Spanish government. Peace seemed now to be established on a solid foundation, and continued till the year 1553, when a general revolt of the Indians happened. Valdivia opposed them with a very inferior force; but being borne down by multitudes, he fell in the unequal contest. His adherents followed his example, and were all slain on the spot. The Indians returned to their country, but have ever since opposed the progress

gress of the Spaniards, whose settlements in Chili bear very little proportion to the extent and fertility of the country.

Chili is situated between the seventy-fifth and eighty-fifth degrees of west longitude, and between the twenty-fifth and forty-fifth of south latitude; being about twelve hundred miles in length and five hundred in breadth. It is bounded by Peru on the north, by La Plata on the east, by Patagonia on the south, and by the Pacific ocean on the west.

DIVISIONS.	PROVINCES.
On the west side of the } Andes,	Chili Proper.
On the east side of the } Andes,	Cuyo or Cutio.

The breed of horses and asses were originally carried from Spain, and have been so far from degenerating, as is commonly the case, that they are improved, and at this time much superior to the Spanish horses themselves. Without any other incentive than their own inclination, they will exert their utmost strength sooner than suffer any other to get before them, while at the same time their motion is so easy, that the rider is not the least fatigued. In beauty and gracefulness they are not inferior to the Andalusian horses; and such is their value, that one of them is thought a present worthy the acceptance of a crowned head. The great demand for them, and consequently their high price, has induced the inhabitants of several countries to attempt the breeding of them, but their perfections have never yet been equalled. Prodigious numbers of oxen, goats, and sheep, are fattened in the luxuriant pastures of Chili, and indeed this is the only part of husbandry to which the inhabitants pay any remarkable attention. As soon as the horned cattle are fat, and the proper season arrived, four or five hundred, and sometimes more, according to the size of the farm, are slaughtered; the fat is taken out, which they melt into a kind of lard called *grassa*, and the flesh is *buccaneered*, or dried in the smoke. But the greatest profit arises from the hide, the tallow, and the *grassa*. A live beast, when fat, and fit to kill, may be purchased for four dollars.

Turkeys, geese, and all kinds of poultry are found here in the same profusion. Wild fowl are also very common, among which are wood-pigeons, turtle-doves, partridges, snipes, wood-cocks, and royal curapicos. A very particular species of bird is found in Chili, called *dispertadore*, or the awakener. It is about

about the size of a middling fowl; its plumage black and white, has a thick neck, the head rather large, erect, and beautifully adorned with a tuft of feathers; its eyes are large, sharp, and lively; its bill well proportioned, strong, and a little curved. On the fore-part of its wings are two spurs, about an inch in length, of a reddish tinct towards the root, but their points resemble those of a cock, being very hard and sharp. These are the weapons it makes use of against other birds, particularly those of prey. It has obtained the appellation of the awakener from the notice it gives to its companions on the least appearance of danger. On hearing the noise of the approach of any creature, whether man or beast, it immediately rises from the ground, and makes a loud chattering, not unlike that of a magpie, continuing the noise, and flying about in the air over the object which caused the alarm. This being understood by every bird near, they take wing, and by that means avoid the impending danger.

The coasts abound in excellent fish; there are also a great number of whales, tunny-fish, and sea-wolves. Here is likewise an amphibious creature peculiar to the country, and called *pajaro nino*, or the bird-child. It has somewhat the appearance of a goose, having a thick neck, a large head, and a strong short bill. Its legs are very small, and its wings extremely short, cartilaginous, and nearly resembling the fins of the seal. Its tail is hardly to be distinguished; its body is entirely covered with a short brown hair, like that of sea-wolves, and generally full of white spots, though some are of other colours; so that upon the whole, the bird makes no disagreeable appearance. It lives either in the water or on the land; on the latter it is easily taken, being very slow in its motions; but when attacked, bites severely, though it is observed never to be the first aggressor.

The only venomous insects in Chili are the *riguas*; and though some snakes are found in the fields and woods, their bite is not dangerous; neither are the inhabitants under any apprehension from ravenous beasts; so that nature may be said to have poured her treasures on this country, without blending them with the usual inconveniences.

The soil produces Indian corn, hemp, grapes, and all other fruits. The European fruit-trees are obliged to be propped, to enable them to sustain the weight of the fruit. The orchards in particular yield great quantities of all sorts of apples. The strawberries are as big as pears, and most commonly red, but sometimes white and yellow. In many places orange-trees are

in bloom, and fruit, throughout the year. Olives also, and almond-trees, thrive exceedingly well; and the inhabitants press a sort of muscadel wine from their grapes, which far exceeds any of the kind made in Spain. The trunks of the vines are in some places as thick as a man's body, and the grapes are amazingly large. Among several remarkable herbs produced in this country, some of which are medicinal, and others applied to various uses, is the panqua, which is of infinite service in tanning leather. It abounds in all parts of the country, and grows about four or five feet from the ground. The principal stem, which is of a soft substance, is between four and five inches in diameter, and about two feet and a half in height, when it separates into branches, bearing round, serrated, rough, and thick leaves, and so large that their diameter, when full grown, is seldom less than a foot and a half, and sometimes two feet. Before the plant is fit to be cut, when the leaves begin to turn red, the peasants make an incision into the bark, and suck the juice, which is very cooling and astringent; but when the leaf begins to turn white, which is an indication of decay, they cut the plant down at the root, take off the branches, and divide the stalk into short pieces, which being dried in the sun, make an excellent tan.

[To be continued.]

ART. II. *Mode of Farming for several Years.*

[Continued from Page 47.]

THE mode of farming I had already adopted, although it produced tolerable crops, had not yet reinstated me in my expences; but as my land was in order, I now began to hope it would. The light land part of my farm I successively sowed with turnips, barley, clover, and wheat; turnips, barley, &c. By this mode, since the year 1773, I have generally made my turnips pay or be worth from 35s. to 50s. per acre; my barley generally produces four quarters; my clover from three to four tons per acre, two cuttings; and my wheat, on an average, three quarters. I always dress my clover with the best stable dung I can procure, and this serves the whole course, as I am not in great concern for my turnips, having always had good ones without; but then I never drive my land, or take more than the crops I before mentioned; thus the land is always in heart, and the dung of the sheep, for I always feed my

my turnips off with sheep, will seldom fail to produce a good crop of barley, nor have I ever known the clover fail after it; without mentioning the advantages, it is the easiest mode of farming; as you have a long time for the turnip tillage to clean your ground, and for the barley season the land wants no cleaning, at a time when seasons may be untoward, or much business to be done. Having said thus much of my light land, I shall close my account with setting before you the succession of crops in that part remaining.

	1774	1775	1776	1777	1778
No. 1.	Wheat	Oats	Clover and grafs	Grafs	Grafs
2.	Oats	Clover	Grafs	Grafs	Fallow
4.	Wheat	Beans	Wheat	Oats	Grafs
5.	Grafs	Grafs	Grafs	Fallow	Wheat
6.	Wheat	Oats	Grafs	Grafs	Grafs
7.	Oats	Grafs	Grafs	Grafs	Fallow
8.	Grafs	Grafs	Grafs	Fallow	Wheat

Here I let my strong land lie in grafs three or four years; the feed will pay, and when broke up after laying three or four years, it will produce corn in greater plenty than before; while in grafs I shall be able to chalk what is left undone, and hope to find a suitable profit to my labour; for strong land, if not rested a few years now and then, will not produce much corn.

When my land is down in grafs, I dress as much as I can, and when I plough up my old lay, I fallow and sow with wheat; the crops I shall afterwards take will be beans, wheat, oats, and grafs again, to lie as before, so that I do not dress my land when in tillage, but on the grafs, and for this I have before had experience on my side.

If any of your correspondents will point out any thing wrong, I shall be glad to learn and amend; it is a good method for a farmer to produce nearly an equality from his farm every year, and this he may do in light land, but not so easily from strong land, as fallowing for wheat every four years will not do, and if it is not fallowed will do worse. I do not like strong land, and if I were to begin farming again with the experience I now possess, I would have no land which would not bear turnips to be eaten off by sheep.

If my health continues, perhaps I may send, now and then, some other remarks, if you think them worth inserting. What I do send shall be the result of experience.

C. WILLIAMSON.

ART.

ART. III. *The Advantage of Thorn Hedges, and Mode of raising them.*

Mr. SYLVAN,

I WAS some time since favoured with one of your circular letters, and think the method you have taken to gain useful information, well adapted to that end.

As your endeavours to obtain and circulate knowledge of the greatest importance to the farmer, are laudable, I am disposed to afford you all the little assistance I can, and for this purpose send you this letter.

I hold a very considerable quantity of land in my own hands; which, by an Act of Parliament, has within fourteen years been mostly inclosed. This laid me under the necessity of planting many quickset hedges; and I have tried various methods of raising them.

The advantages of a white-thorn fence are greater than of any other. This plant is a quick grower, and when planted in a proper soil, will shoot two or three feet in a season.

Though tender when young, it will soon grow strong, and may, by cutting, be rendered very thick, and impenetrable.

There are various methods of raising them. That of sowing the seeds is tedious, but certain. After they have stood a year in the seed bed, transplant the largest into a nursery, at the distance of eight or nine inches, till they are five years old, at which time they are the most proper to be planted as a hedge. If they are planted younger they will be of slow growth, and the fencing necessary to secure them from cattle, will be troublesome and expensive.

Thorn hedges may be planted any month in the winter or spring, except when there is a severe frost; but those planted in October I have always found to be the best.

They are more healthy, and push more vigorously than when set later. In preparing the thorns for planting, the roots should be left as entire as possible; and nothing but the rotten or ragged parts cut away.

I have practised a frugal and expeditious mode of raising these plants from the wounded roots that are cut off when removed from the nursery. These roots cut in small parts, and put into fresh earth, will produce plants the next spring no less vigorous than those raised from seed; and thus a perpetual succession of plants may be obtained without any more seed.

In planting these hedges, I have deviated a little from the common mode, which is liable to many objections. As these
plants

plants suffer greatly by weeds, the ground whereon they are planted should be well cleaned. After the thorns are prepared by trimming their roots, and the top of the bank is flattened, lay them in, parallel to the ditch, and about ten inches asunder. Then cover the roots with good mould about three inches thick, leaving a hollow between the edge and back of the bank. This hollow will intercept every drop of rain that falls on the bank, and cause it to sink gradually through the rich mould to the roots of the plants; this will greatly promote their growth.

I have, in making other hedges, set the plants erect, being not able to give any good reason why a thorn thrives better sloping than upright; and they have proved equally thrifty.

The poorer the soil of your bank, the thicker your hedge should be planted; but in general eight inches is a proper distance, and on a rich bank, ten inches.

When the thorns are sufficiently covered, it is better to delay finishing the ditch till the frosts are over. Spring is the proper time for completing this work, while there is sufficient moisture in the soil to bind the mould of earth that is raised behind the thorns. If delayed till the earth be dry, it never binds: If completed the beginning of winter, frost swells the earth, loosens, and makes it crumble down.

To preserve these new-planted hedges from cattle, the ditch ought to be six feet wide, three deep, and as narrow at the bottom as the spade will allow. Paling at the back is the best defence, provided that paling is strong; otherwise unruly cattle will soon rub, or beat it down.

I will now add a few observations on training these hedges after they are planted. The usual method is to cut off the top, and shorten the side branches, in order to make them thick and bushy. For the same end, the young thorns, after standing six or seven years, are sometimes cut within three inches of the ground, which multiplies the stems, and makes the hedge still thicker.

This form of a hedge pleases the eye: By its thickness, it is formidable to cattle, but when bare of leaves, its weakness is discovered, and it is easily penetrated.

I have had the experience of three hedges trained as follows: The first has been pruned on the top and sides annually. The sides of the second have been pruned, but the top was left entire. The third was allowed to grow without any pruning. They are all twelve years growth. The first is about four feet broad, and thick from top to bottom; but weak in its stems, and unable to resist the force of any horned beast. The second
is

is strong in its stems, and close from top to bottom. The third is also strong in its stems, but for two feet from the bank, bare of side branches, which have been destroyed by the overshadowing of those above, which deprived them both of rain and air. That the second is the best method is fully ascertained by experience. And that it ought to be so, will be evident, if we can trust to analogy. In the natural growth of a tree, its trunk is proportioned to its height. When the head is lopt, its side branches multiply till it becomes a bush, without rising in height or swelling in the trunk: Hence the following method, which I recommend as the best that can be adopted. Allow the thorns to grow without cutting their tops, till their stems be five or six inches round. In a good soil, with careful weeding, they will be of that size in ten or twelve years, and fifteen feet high. The side branches only must be attended to: Those next the ground must be pruned within two feet of the stems: Those above must be made shorter and shorter in proportion to their distance from the ground, and at the height of five or six feet they should be cut close to the stem; leaving all above in full freedom of growth. By this method of dressing, the hedge appears like a steep roof, and may easily be kept in that form, by pruning. This form gives free access to rain, sun, and air: Every twig has its share, and the whole is preserved in vigour.

When the stems have arrived at their proper bulk, cut them off at six feet distance from the ground, where the trimmed side branches end. This answers two excellent purposes; the first is, to strengthen the hedge; the sap that formerly ascended to the top being now distributed among the branches. The next is, that a tall hedge stagnates the air, and poisons both corn and grass that grows near it.

A hedge trained in this manner, is impenetrable even by a bull; he may press in the side branches, but the stems will stand firm. For a full and obvious proof that this method will answer better than any other, observe the thorns that from space to space are suffered to remain uncut in a hedge row. These have stems far larger than the rest. Besides the strength of such a hedge, it will in the end be found less expensive than one reared in the common way: The weeds are sooner choaked; and it requires much less pruning. When so much labour is spared, there is less room to grudge the price of the best thorns that can be procured. They ought to be of an equal size, and equally vigorous, that they may not over top each other.

A hedge ought never to be planted on the top of the mound of earth thrown out of the bottom of the ditch; because this being a dead or bad soil, and destitute of moisture, the thorns planted thereon cannot thrive, but will very frequently decay and die.

It is scarcely necessary to mention gaps in hedges; because they will seldom happen where a hedge is trained up agreeable to the above direction. By the common method of training, gaps are frequent, partly by the failure of plants, and partly by the trespassing of cattle. The usual method of making up gaps, is, where they are small, to plant briar, and where large, a crab. This method I cannot approve, for an obvious reason: A hedge ought never to be composed of plants that grow unequally.

We have always cut down the first year's shoots close to the stem, and have found it to answer, and we never suffer the hedge to exceed four or five feet in height, where we keep it in bounds.

It is better to remove the withered earth, and substitute some fresh mould mixed with lime, or marle, and therein plant a vigorous thorn of equal height with the hedge; by this means the beauty and use of the hedge will be best preserved. I have made these observations from my own experience, as well as the practice of some eminent farmers in this county, and wishing they may prove useful to your readers in general, I remain,

Your most obedient Servant,

Norfolk, Feb. 8, 1778.

CHARLES ROBERTSON.

ART. IV. *On the proper Size of a Farm, and the useful Accommodations it ought to have for the Benefit of the Tenant.*

MR. SYLVAN,

TO confine a tenant to that quantity of land which can be managed to the best purpose, with the least expence, is the surest means of obtaining an adequate rent without oppression. A farm ought never to contain a less quantity of land than is sufficient for a plough; and there is no medium between that quantity, and as much as will give full employment to two.

Less than is sufficient for a plough is an evident loss to the tenant, and consequently to the landlord: The servants and cattle must at times be idle for want of work; or, what is still worse, they will work indolently till indolence becomes habitual. A farm that cannot be commanded by one, and is not sufficient for two, is still more unprofitable. The tenant, while endeavouring to make something of every field, cannot do justice to any; and the farm grows poorer every year.

In calculating what quantity of land is sufficient for a single plough, many circumstances occur that make it impracticable to determine the point with precision. The difference between a light and a heavy soil, is considerable; and no less to the nearness or distance of manure.

In most common soils, fifty acres of corn may be commanded by a single plough, provided the crops be so distributed through the year, as to afford time for managing them all with the same men and cattle. But where grass is wanting to keep the soil in heart, a farm ought to be enlarged in proportion to the quantity of grass required; for there ought always to be as much land in tillage as fully to occupy a plough.

If a third part in grass be sufficient, the farm ought to consist of 75 acres; if a half be necessary, the farm ought to be 100 acres; and if the soil be so poor as to require two-thirds in grass, the extent of the farm ought to be 150 acres.

I proceed now to consider an interesting article, which is, to compare great and small farms in point of utility. I call that a small farm which employs only a single plough; and a smaller there ought not to be. A middling farm is, what requires two ploughs; and whatever requires a greater number, I call a large farm. These different farms I shall consider with regard to the landlord, the tenant, and the public.

With respect to the landlord, there are advantages and disadvantages that tend to balance each other. Small farms draw the greatest number of candidates, which cannot fail to raise the rents. On the other hand, small farms occasion a great expence for houses, and in a country where building materials are costly, large farms may appear to be the interest of the landlord.

With respect to tenants, a farm as large as can accurately be managed, is undoubtedly the interest of all who have money to stock it sufficiently. But the proper question is, whether with respect to farmers in general it is not a convenience to have the choice of small or large farms according to their stock? In that view, small farms are undoubtedly advantageous to those who

who want to be farmers; because, in many places, the number is much greater of those who can stock a small farm, than of those who can go farther. It may possibly be objected, that there is an inconvenience in a small farm, where two horses only are necessary for a plough; because two horses make but a slow progress in carrying corn, or dung. To this objection, it may be answered, that two horses, in two single carts, will make as much expedition in carrying out the dung, or corn of a small farm, as double that number will make in a middling farm where the dung and corn are double in quantity. But if two horses are not sufficient, the defect may easily be supplied by two draught oxen, which will add very little to the expence of the farm.

Their work will balance their summer food of green clover; their winter food of straw must not be reckoned, being the very best method of converting straw into dung. In this, there is a great convenience; where a field, by drought, or otherwise, is rendered too stiff for a pair, the oxen may be yoked in the plough with the horses. In ground less stiff, the farmer has his choice of two oxen and a horse, of two horses alone, or of two oxen. Ploughing and harrowing may go on at the same time; and the farmer always has it in his power to yoke two double carts.

With respect to the public, small farms are undoubtedly the most advantageous. The number of servants, it is true, must be proportioned to the size of the farm: But in a middling farm, there is but one tenant; whereas in two small farms of no greater extent, there are two. The difference is still greater in large farms: This is a capital circumstance. The children of tenants are taught to read and write; and in general are better educated than children of day labourers, which qualifies them better for being artists and manufacturers. Thus small farms are not only favourable to population, but to the most useful population.

I therefore wish no farms above the middling size were permitted; and to check those of a larger size, I wish a tax of five pounds in the hundred were laid on every farm that requires more than three ploughs. I except proprietors, who ought to be encouraged to improve their estates; let such employ as many ploughs as they please, without being subject to any tax.

R. E.

ART. V. *On the Practice of setting Wheat in Norfolk.*

Mr. SYLVAN,

THE information I now send, you may venture to rely upon, it being either the result of my own observation and experience, or of such friends, upon whose accuracy and integrity, I can fully depend.

The practice of setting wheat in Norfolk is very general in the eastern part of the county; in the western, it has not been so much known, but is becoming so very fast; and wherever it has been adopted, it has, I believe, been no where yet discontinued. The skill and labour required in the performance of it, are so little, that it is now done in many places by women and children only; the women dibbling, and the children dropping the seed; in consequence of which, there can be few places so thinly inhabited, but the farmer may obtain hands sufficient to do it upon the largest scale, and the expence, which was at first eleven and twelve shillings per acre, is now reduced to eight shillings, for which last-mentioned price I have had mine set for these three years. Each dibbler employing three droppers, will set half an acre a day, making eight holes in the length of every foot of the flag, whereby two dibblers, with their six droppers, will find full employment for one plough, which, however, is not very material, as there need be no loss of time on that account, since the land may be all ploughed as fast as it can, and set as soon after as is convenient. The advantages attending this practice are, the saving a considerable quantity of seed, (six pecks per acre at least, supposing ten pecks per acre the average quantity sown,) obtaining cleaner and better corn, providing a very lucrative employment to many of the poor, who would at that season have little to do, and gaining a greater produce; which last benefit, I must own, I venture to assert, upon no better ground than that of two experiments only, but those conducted with so much care as to be nearly decisive: These trials were made in the years 1774 and 1775, in the following manner. About Michaelmas 1774, a field of clover and rye grass stubble, containing twelve acres, was broken up and ploughed into broad ridges (the land being found and dry) which ridges were alternately set and sown throughout the whole field, and the corn, after reaping, was laid out and carefully kept separate; upon threshing, it was found, that the wheat which had been set produced two bushels per acre more than the sown. About Michaelmas 1775, the

the like experiment was tried in a field of eight acres, which was a clean clover stubble, treated in all respects as the former, when the result was, that the produce of the set wheat exceeded that of the sown, one bushel per acre in both trials; the corn of the set wheat was more equal, and proved the best by far, so that, independent of the advantage accruing to the farmer from supporting the poor by employment, (the best mode of doing it) instead of assisting them from the parish fund, (perhaps the worst) you will see, as I shall now state the account, that there is sufficient inducement from the immediate profit for him to attempt and persist in this practice:

Profit by the seed saved on six acres, being nine bush-	
els, at 5s	2 5 0
Ditto by increase of produce, suppose six pecks per	
acre, on an average, nine bushels,	2 5 0
Profit, £.	4 10 0
Expences of setting six acres of wheat, at 8s. per acre	2 8 0
Clear profit, £.	2 2 0

which is seven shillings an acre; but there are other advantages which I have not yet mentioned: A very great one I experienced this year, which was, that when, from the great quantity of rain which fell in the last summer, all my sown wheat was more or less lodged, none of my set wheat was at all so, by which I suffered less loss in reaping the latter than the former, and the corn was much superior in quality; and it has been found, that on rye-grass stubble, or lands foul with twitch grass or other weeds, the corn being set on the middle, instead of running (as it does by sowing) into the space between the edges of the flag, comes up free from the impediments of the grass and other trumpery, which usually environs it in the other method; and to this circumstance it is perhaps owing, that in the two experiments I have related above, the produce on the clover and rye grass stubble exceeded that on the clean clover stubble, one bushel per acre; so that setting wheat seems more peculiarly adapted to grassy and foul lands,—a lucky circumstance, as the number of slovenly farmers so greatly exceeds that of the neat ones.

I hope, what I have said on this subject will be sufficient to set this matter in its true light. I am sure it appears so to me, for as I do not wish to support systems, I believe I have felt no prejudice in favour of any; you are therefore welcome to
make

make any use you please of this letter, concealing only my name; as from the hurry in which I have written it, I am afraid it may be full of inaccuracies. I am, Sir,

Your very humble servant.

H———l, March 5th.

T. B.

ART. VI. *On raising Trees from Seed, concluded.*

[From Lord KAIME'S GENTLEMAN FARMER.]

THE best way of preserving seed is in dry sand, which sucks in the moisture from the seed, and prevents mustiness. It withal retains so much moisture as to prevent the seed from withering. This method is chiefly useful in preserving, during winter, seeds that require spring-sowing, and in the conveyance of seeds to a distance. The efficacy of dry sand appears in preserving oranges and citrons, which in the air dry and wither: if to prevent withering they be laid in a moist place, they never fail to turn musty. There is one exception, that seed which lies long in the ground before it germinates, ought to be preserved in moist earth. The seed of the sensitive plant will keep entire for twenty years; of a melon for nine or ten. There are many seeds that will not keep entire longer than two or three years; which is the case of flax-seed, though remarkably oily. Some seeds require to be put in the ground as soon as ripe.

To prevent young plants in the seed bed from being spewed out by frost, cover the beds with leaves of trees, to be removed when the severe frosts are over.

We proceed from the seed-bed to the nursery. Plants form very different roots, according to the soil they grow in. In stiff soil, the roots are commonly few, but strong and vigorous, for overcoming the resistance of such a soil. Roots multiply in proportion to the richness and mellowness of a soil. An oak, for example, has a strong tap-root, which fits it, more than any other tree, for growing in a stiff soil. This root diminishes in strength and size in a loam, and still more in a sandy soil. When it grows in water, it has a multitude of roots, but not the least appearance of a tap-root. Hence it follows, that the soil of a nursery ought always to be light and free: such a soil produces a multitude of roots; and the vigour of growth is always in proportion to the number of roots, the smaller the better. But it also follows, that in transplanting trees from such a nursery, the soil about them ought to be made as mellow and free as possible, in order to encourage the small roots.

When

When these are enlarged in so fine a soil, they will be able to overcome the stiffness of the natural soil of the field. Avoid dung in a nursery. If any be admitted, it ought to be thoroughly putrified, and digested into a sort of rich mould. Green dung makes the roots ill-conditioned, and encourages a large white worm, which lives on the bark of the roots. Neither the walnut nor horse-chestnut succeed in a nursery: the plants require to be placed at a distance from each other; and the earth about them must be stirred several years. Aquatics, that are intended to be propagated by large cuttings, ought first to have the benefit of a nursery; because they thrive best when planted out with the roots. Avoid a mixture of different trees in the same bed, for the slow growers will be oppressed.

The true season for transplanting from the seed-bed to the nursery is about the fall of the leaf. Catch the time when the earth is so moist as to suffer the plants to be drawn without tearing the roots. All evergreens ought to be transplanted in spring; and also all other trees that suffer by frost.

Where trees are so young as that an interval of five or six inches along the rows is sufficient, there must be an interval of a foot at least between the rows, in order to give access to clean the ground of weeds; and this interval is sufficient, even when the plants are so large as to make an interval of a foot along the rows necessary; where the distance along the rows is made eighteen inches, or two feet, the intervals between the rows ought to be no less, for the sake of the trees, though unnecessary for the sake of weeding. Yet such is the influence of custom, contrary to common sense, that from the original position of young plants in a nursery, the interval between rows is always made double of the interval along the rows. Thus if the latter be eighteen inches, the former is always made three feet; and four feet where the size of the trees requires an interval of two feet along the rows. The same influence of custom occasions trees to be planted in rows in the field, where they are to stand; and yet they make a much better figure, when, in imitation of nature, they are scattered as at random.

ART. VII. *Directions for managing the Kitchen Garden*
in APRIL.

IN the beginning of this month, make ridges for melons and cucumbers, for bell or hand glasses, which work may be continued to the end of the month, where large quantities are required.

Sow thyme, summer savory, purslane, and other sorts of tender seeds, which would not bear the open ground early in the year.

Plant kidney beans in a warm place, and a dry soil; and continue hoeing your crops of radishes, carrots, onions, parsnips, &c. leaving them at proper distances, stirring all the ground round them, and cutting up all weeds lightly: this work must be done only in dry weather, and will be of great service to your crops, as also to preserve your ground from weeds the succeeding months.

If the weather is moist, plant slips or cuttings of sage, rosemary, savory, or any other sorts of sweet herbs, which may also be deferred till next month, if the weather be dry, or other business prevent you.

Plant garden beans for a latter crop, and continue sowing your crops of large pease, to succeed those sowed in the last month; and sow celery in a shady border.

You may also continue to plant artichokes, and the latter crop of cauliflowers, upon a moist soil; but upon a dry one, it were better if performed the last month.

Young fallowing must now be sown every week at least, for in a few days it will be too large for use; and continue to sow lettuce of all kinds for late cabbaging; and sow cardoons for blanching in autumn.

After a shower of rain, draw the earth up to the stems of cauliflowers, cabbages, and artichokes, which were planted the last month; but observe not to let any of the earth fall into the heart of the plants: be careful also to destroy snails, and other vermin, which are invited abroad by kindly showers at this season.

If the nights prove cold, you must be very careful to cover the glasses over your early melons and cucumbers, for the young fruit is very subject to drop off where the beds are grown cool, or proper coverings are wanting.

In the beginning of this month, you may graft some late fruits, and the variegated hollies may now be grafted upon stocks of the plain sort.

Look carefully to your young fruit trees, and if the weather prove very dry, water them gently all over, especially if you find the leaves inclinable to curl up: this may also be done to grown trees, many times to great advantage, but never to do it when the sun shines hot, nor too late in the evening, lest the nights should prove cold or frosty, which would endanger your crop of fruit.

Edward

Toward the latter end of this month, you may begin to go over your walls and espaliers of fruit trees, training in the young shoots, and displacing all fore-right or luxuriant ones, as they are produced; you may now also thin your early apricots; those you leave on will be greatly forwarded thereby.

Plant cuttings of vines in the places where they are to remain, or in nursery beds for removing: you may also look over old vines, and rub off all small and ill-placed shoots, which now begin to appear.

In the middle of this month, if the weather be good, begin to uncover such fig trees as were screened with reeds, &c. from the last winter's cold; but this must be done gradually, and not expose the tender fruit suddenly to the cold.

ART, VIII. *On covering Fruit-Trees with Ivy.*

Mr. SYLVAN,

IF you think the following worth a place in your Magazine, your inserting it, will oblige,

R. C.

THE ingenious Roger Gale, Esq; of Scruton in Yorkshire, at the bottom of a letter in the *Philos. Trans.* No. 475, giving an account of melon seeds, thirty-three years old, becoming fine plants, and others, forty-three years old, producing fruit, has the following short note:

By covering my trees with ivy in February, I have vast quantities of apricots and peaches, while my neighbours have hardly any.

I do not suppose that he covered them with growing, but only with cuttings of ivy, or branches stuck in divers places between the fruit tree and the wall. However, such tender trees may be covered with growing ivy, if it has so good an effect, by raising some ivy trees on the other side of the wall, to spread in summer time over some lattice of laths on the said side; and in winter, to be turned over the side where the fruit trees are, so as to defend them, and this may be done at one motion, by making the harbour or lath frame with hinges, by which to turn over the top of the wall, and so hang as a defence to the fruit trees. Ivy trees for this use might be raised in boxes, or pots to spread like espalier hedges, and be moved in winter or summer to serve as skreens.

ART. IX. *A rational Account of the Weather, by the Rev.**Mr. POINTER.*

IF the sun at his rising looks red and fiery, it denotes wind and rain; if the clouds look red at sunrise, there will be a tempest.

If the clouds are driven from before the rising sun to the west, a sign of fair weather.

Clouds appearing white, like fleeces of wool, scattered about in the sky, denote fine weather.

Clouds appearing like rocks and towers, denote frequent showers.

If small clouds grow bigger and bigger in an hour or two, much rain may be expected.

If large clouds diminish and become smaller, fair weather is promised.

If mists rise out of ponds, brooks, &c. and vanish away, a sign of fair weather.

If mists rise to the hill-tops, rain may be expected in a day or two.

If before sun-rising there be a general mist, both on the hills and vales near the full of the moon, it signifies fair weather.

If such a mist happen in the new moon, it denotes rain towards the end.

If such a mist happen in the old moon, it portends rain in the new.

In eight years time it is observed by some, that rain and fair weather, south-west and north-east winds are equal, consequently there will be in that course of time an equal quantity of wet and dry.

When the wind turn to the north-east point, and continues two days without rain, and turns not to the southward, nor rains the third day, it is likely to continue eight or nine days, and then turn to the south.

If the wind turn from the south to the north-east, and continue in that point without rain two days, and turn not to the south, nor rain the third day, likely to continue north-east for the most part for two months.

When the wind has continued for the most part north for two months or more, and comes to the south, it is usually fair for three or four days at first, and then rains on the fourth or fifth; else the wind turns north, and the weather continues still dry.

III. 107. If

If the wind return to the south within a day or two without rain, and to the north with rain; and return to the south the first or second day as before, two or three times together, then it is likely to be in the south or south-west two or three months together, as it was in the north before. The winds will finish these turns in a fortnight.

If it be fair weather out of the south for a week together, which is not usual, like to be a great drought, when it has been long wet before.

ART. X. The HOUSEKEEPER'S DIRECTORY.

[Continued from Page 22.]

Compound Wormwood Water.

TAKE the outward fresh rinds of lemons one pound and a half, orange peels one pound, tops of dried wormwood and winter's bark, of each half a pound, flowers of chamomile four ounces, lesser cardamoms, cloves, and cubeba, each one ounce, cinnamon, nutmegs and carraways, of each two ounces, spirits of wine six quarts, spring water four gallons and a half, distil off three gallons.

Hungary Water.

Take flowers of rosemary twenty ounces, rectified spirits of wine three pints; after infusion for some days, distil.

Spirits of Wine camphorated.

Take spirits of wine one pint, and add of camphor half an ounce.

Compound Horse-radish Water.

Take the juice of Icurvy-grass twelve ounces; the juices of brook-lime and water-crefles, one pint and a half; horse-radish root two pounds; arum root, fresh, six ounces; winter's bark and nutmegs, each four ounces; lemon peels, fresh, three ounces; proof spirits and water, each a gallon and a half; draw off a gallon and a half.

Syrup of Mulberries.

Take of the juice of mulberries (become clear by settling) a quart; and with four pounds of white sugar make a syrup of it by gentle boiling.

Rosa Solis.

Take of the herb rosa solis or youthwort, clean picked, a pound and a quarter, marygolds a quarter of a pound, carraway seeds three ounces, cinnamon, cloves, and nutmegs, each one ounce,

ounce, proof spirits two gallons and a half, water two gallons; distil off two gallons and a half. In this liquor put four ounces of liquorice root, a pound of raisins stoned, four ounces of red sanders, and twenty ounces of fine sugar; infuse for several days in a warm place, and then filter through flannel or paper for use.

Ratifa.

Take apricot kernels half a pound, ambergris three grains, double refined sugar a pound, French brandy one gallon; infuse for ten or twelve days, shaking often, and then filter off through paper.

Uisquebaugh.

Take of good brandy ten gallons, cloves two ounces, nutmegs, ginger, and carraway seeds, each four ounces, liquorice root and sun raisins stoned, each two pounds, dates blanched and cinnamon each four ounces, musk and ambergris each four grains, fine sugar five pounds, digest a fortnight, and then filter for use.

Citron Water.

Take fresh lemon peel eighteen ounces, orange and citron peel each nine ounces, nutmegs four ounces, proof spirits three gallons, water two gallons and a half; distil, and add to the liquor two pounds of double-refined sugar, and keep it closely stopp'd.

ART. XI. *A Receipt to kill Rats.*

TAKE one ounce of cantharides, one ounce of crude antimony, both finely powdered, half a pound of currants, and a pint of oatmeal, mix all together, and place it in small quantities where they come, with some water nigh at hand for them to drink afterwards.

ART. XII. *To make a Hoghead of Wine for Port.*

Mr. SYLVAN,

Peterham, March 14.

AS the new duty on Port wine will necessarily advance the price, I send you a receipt to make a wine equal to a great part of the tavern port sold; it is different to that in your Mag. for June 1776, and you may either keep it to yourself, or give it to your friends.

Take Alicant wine 12 gallons,
French Brandy 9 gallons,
Very good old cyder 42 gallons,
Burnt sugar, or elder juice, enough to colour it, mix.

ART. XIII. *A cheap and wholesome Food.*

TWO pounds of beef or pork, fresh or salted, cut it into small bits, boil or stew it till it is tender in six quarts of water; then put of carrots, parsnips, turnips, and potatoes, cut small, each a quarter of a pound, with a few onions and what else may be agreeable, put to it half a pint of oatmeal, or a pint of peas; season according to your palate with pepper and salt.

ART. XIV. *On sowing Wheat without Liming or Brining.*

Mr. SYLVAN,

FOR several years last past I have made it a rule to sow my wheat dry, without brining or liming; for I cannot conceive any good reason can be given, which a farmer will understand, why brining, &c. should diminish smut, as pretended, or do any other good. My wheat is as healthy and good without, as that in the neighbourhood with.

Warfield, Berks.

G. COTTERELL.

ART. XV. *Method of raising CALVES with Hay-Water and Milk.*

Mr. SYLVAN,

AS the Bath Society have offered a premium for raising Calves without milk, I beg you will insert the following method from the Dublin Society, in which only a small quantity of milk is used.

Hay-water is thus made: Into a small churn, can, or earthen vessel, provided with a close cover, put as much fine sweet hay, cut once or twice, as will rise to the top of the vessel, when laid in and lightly settled with the hand; then fill up the vessel with clean boiling water, and cover it immediately. In two hours time, the water will be so impregnated with the strength and virtue of the hay, as to afford a brown, rich, sweet liquor, like ale wort, or strong tea, which will keep good two days, even in summer, either poured off, or standing in the vessel, and is to be used as follows:

In three or four days after a calf is dropped, and hath been purged by sucking the cow's beestings, make up the usual and proper quantity of liquor allowed for one meal; at first with three quarts of milk, and one of hay-water; in three or four days after, two thirds of milk; and last of all, a fourth part of milk will be sufficient. The mess is to be given to the calf, milk warm, morning and evening, containing about three quarts at
a meal

a meal at first, and rising to about four quarts by the end of the month. During the second month, besides the like quantity given him at each meal, tie up a little bundle of sweet hay before him, and he will eat by degrees, or if the weather be favorable, as in May, let him be turned out to graze, in a good dry pasture, well fenced and sheltered; this diet may be continued in the third month, only towards the latter end of it when he grazes heartily, less than a quart of milk, with hay-water, will be sufficient for a mess; or skimmed milk, or fresh buttermilk, may serve instead of new milk. After the third month, he will hardly want any hand feeding; if he should, one meal a day will suffice, and that of hay-water only, which need not be warmed in summer.

Great would be the advantages to this kingdom, (Ireland) if this method of rearing calves was generally followed. Poor cottagers generally kill their calves, especially such as drop early in the year, for want of milk, which is then of consequence to maintain their families. Many calves are lost, when their dams are sickly, or happen to die; and most of the calves that are fed in the common way, by a little milk from the dams at first, and afterwards by buttermilk, skimmed milk, and thin pottage made of bean meal, pease meal, or oatmeal, and water, grow tumbled, and stunted, and either die of themselves, or, if reared, are worth very little for the pail or the knife. From these causes many thousand calves are yearly lost, which by the method here proposed might be saved, to the increase of our national stock and trade.

C. — P. 8.
[The preservation and propagation of cattle deserve the greatest consideration, and all lights thrown on so material and interesting a subject deserve not only the encouragement of particular societies, but even the nation itself; and we shall esteem ourselves happy, in being able to convey any hints to the public, through this magazine, which may be conducive to the general good, and become the common practice of all.]

ART. XVI. On sowing Tartarian Oats.

MR. SYLVAN,

WITH respect to the cultivation of Tartarian oats, I find they are well adapted to any soil, whereon the common white or black oats will succeed.

I sowed a field with them at the usual time last spring, the soil between light and strong, being a mixture of gravel and clay. The

The straw was very long and stout, and is certainly superior to any other for thatching, being nearly equal to reed, if the oats be reaped, and the tops of the sheaves cut off, before they are threshed.

Several of my neighbours laid wagers that I had twelve quarters per acre;—but the produce, although near double the quantity of common oats on the best land, did not fully answer their expectations, being only about nine or ten quarters per acre; but this I attribute in part to the crop being laid by heavy rains, whence I believe a very considerable waste ensued. The quantity of seed sown was nine pecks per acre. At all events they are the most profitable kind of oat a farmer can cultivate, and although they are rather smaller yet they are equal in weight, which is the best test to judge of their quality.

K--v-d-n, Feb. 4, 1778.

J. D.

ART. XVII. *Increase of Milk from Saintfoin.*

Mr. SYLVAN,

IN looking over the list of premiums offered by the Bath Agriculture Society, I was much pleased to find they have encouraged the cultivation of saintfoin. In this neighbourhood we have many large fields of this excellent grass, and find it the best and most profitable of any that we raise. The quantity of hay produced is very considerable, and the quality exceeding good. But there is one advantage attending this grass, in which it exceeds all the rest; and that is, feeding milch cows: The prodigious increase of milk is astonishing; the milk produced by it is better, and yields more cream than any other.

S-----n W-----n, Jan. 14.

A LANDHOLDER.

ART. XVIII. *Method of obtaining natural Flowers in Winter.*

Mr. SYLVAN,

THE most surprizing and unexpected effects are sometimes produced by the most easy and simple means; such is the method I now beg you will insert.

W. R.

CHOOSE some of the most perfect buds of the flowers you would preserve, such as are latest in blowing and ready to open; cut them off with a pair of scissars, leaving to each, if possible, a piece of the stem about three inches long; cover the
end

end of the stem immediately with Spanish wax, and when the buds are a little shrunk and wrinkled, wrap each of them up separately in a piece of paper perfectly clean and dry, and lock them up in a dry box or drawer, and they will keep without corrupting.

In winter, or at any other time, when you would have the flowers blow, take the buds over night, and cut off the end of the stem sealed with Spanish wax, and put the buds into water, wherein a little nitre or salt has been infused, and the next day you will have the pleasure of seeing the buds open and expand themselves, and the flowers display their most lively colours, and breathe their agreeable odours.

ART. XIX. *A Method of preserving Fruit.*

PITCH upon the best and most perfect of the fruit you would preserve whilst hanging on the tree, which is not in the least bruised, nor the skin any where scratched or broken. Do not touch or gather it with your hands, but tie a strong thread about the stalk, and, holding the thread tight in your hand, cut the stalk above the thread with a pair of scissars; the fruit being thus detached from the tree without touching the branches, or any thing else, close the cut end of the stalk with Spanish wax to prevent the air acting upon it: Then roll up a sheet of white paper in the form of a cone, with a little opening at the top; through this aperture pass the thread tied to the stalk of the fruit, so that it may be suspended in the cone, then close the aperture with soft green wax, and fold in the paper at the bottom, and close and secure it with wax in like manner, so that the air may be effectually excluded; and then let it be hung up in a dry place, neither too hot or too cold, and so as not to touch any thing: In this manner apples, pears, plumbs, cherries, and all such like fruits, may be preserved perfect and sound for two or three years.

ART. XX. *Method of building Chimneys, which will not be liable to smoke.*

LET not the height of the mantle exceed one third of the height of the room; let the jaumbs and the breast be carried directly upright, at least to the cieling; and then let the turn be as gradual as possible; let the lower part of the mantle be a broad horizontal plane, and let the front of the chimney be so contrived that

that a perpendicular line, let fall from the inside, will come an inch before the grate; let the distance from the inside of the breast to the back, on each side of the throat be from 10, to 14, or 16 inches, according to the size of the chimney; let the chimney be carried high enough.

A BRICKLAYER.

ART. XXI. *Cure for the Measles in Hogs.*

Mr. SYLVAN.

I Beg you will insert the following receipt, which I have used some years with good success.

I. B.

As soon as the little black pustules are well formed upon the tongue of the hog, or the distemper shews itself by the hoarseness of the animal, give half an ounce of crude antimony in powder every morning.

To prevent infection among those which are well, give a dose three times a week.

ART. XXII. *Management of Poultry.*

TAKE particular care to keep your hen-roost quite clean; do not chuse too large a breed, they generally eat coarse. You may keep six hens to a cock. When fowls are near laying, give them rice whole, or nettle-seed mixed with bran, and bread worked into a paste; in order to make your fowls familiar, feed them always in one place, and at particular hours.

Take care to keep vermin from your store-house; contrive your perches not to be over one another, nor over the nests, which always take care to keep clean straw in.

When you design to set a hen, as you will know the time by her clucking, do not put above ten eggs under her. March is oned a good month to set a hen in, but if they are well fed they will lay many eggs and set at any time.

Wherever poultry is kept, all sorts of vermin naturally come. It would be well to sow wormwood and rue about the places you keep them in, they will resort to it when not well; and it will help to destroy fleas. You may also buy wormwood and sprinkle the floor therewith.

As to rats, mice, and weasels, traps should be always kept for them, or you will never have any success.

Ducks usually begin to lay in February; if your gardener is diligent in picking up snails, grubs, caterpillars, worms, and

other insects, and lay them in one place, it will make your ducks familiar, and it is the best food you can give them. Parsley, sowed about the ponds or rivers they use, gives their flesh a pleasant taste; be sure to have a place for them to retire to at night. Partition off their nests, and make them as nigh the water as possible, and always feed them there; it will make them love home, being of a roaming nature.

Their eggs should be taken away till they are inclined to sit; it is best to let every duck sit upon her own eggs; the same by fowls.

Geese. The keeping of geese is attended with little trouble, but they spoil a deal of grass, no creature caring to eat after them. When the goslings are hatched, let them be kept within doors. Lettuce-leaf, and pease boiled in milk, are very good food for them. When they are about to lay, drive them to their nests and shut them up, and set every goose with its own eggs, always feeding them at one place, and at stated times.

They will feed upon all sorts of grain and grass; you may gather acorns, parboil them in ale, and it will fatten them surprisingly.

Turkies require more trouble to bring up than common poultry. The hen will lay till she is five years old. Be sure always to feed them near the place where you intend they should lay; in other respects they may be managed as other poultry.

They should be fed four or five times a day, being great devourers; and, when they are sitting, must have plenty of victuals before them, and also kept very warm.

To fatten them, you must give them sodden barley, and sodden oats, for the first fortnight. Cram them as capons.

ART. XXIII. *On the new Method of setting Wheat now practised in Norfolk and Suffolk, Cabbages, Turnips, &c.*

SIR,

S—N A—Y, Suffolk, 1778.

THE desire of being useful to society leads me to communicate to you the following account of a new practice in Agriculture, which is become general in the counties of Norfolk and Suffolk; and if there is any other information I can convey to you, I shall receive great pleasure in doing it, or in answering any questions which you may chuse to propose to,

Your most obedient humble servant,

S—

IN

IN the month of October the lands which have produced broad clover, or artificial grass, or sometimes old pasture the foregoing summer, are ploughed up, taking care to lay the earth as even as possible, after which a heavy roller is passed over it; then a man, or several men, each with a pair of instruments, called dibbles, walk backwards, making two rows of holes on the earth turned out of every furrow; so that the holes are at three inches distance in the rows, and the rows four feet and a half distant from each other. One pair of dibbles employs four children, who follow the man, and drop two grains of wheat into each hole. After this a hurdle covered with bushes is drawn along the land by a horse till the wheat is covered and the holes filled up. In this method the seed is regularly placed in the ground, five pecks being sufficient for an acre, whereas ten pecks are usually sown.

An experiment was lately made in Norfolk, and the following particulars laid before their Agricultural Society.

A whole field, in alternate fatches, was *sown* and *set*; the *sown* wheat was cut, carried, and threshed separate from the *set*: The produce of the *set* part was eight bushels per acre more than the *sown*, and declared to be six-pence per bushel better.

I myself have this year set twenty-three acres, nine of which are old grass land ploughed this year for the first time: Seven more acres are a lay of seven years, and the remaining seven have been in grass only two years. The whole work, viz. ploughing, rolling, setting, and harrowing, was performed in seventeen days by three ploughs, a pair of horses and one man to each plough, five men dibbling, and twenty children dropping; the roll and bush harrow employed another man. The land was as follows:—The first field a black moorish soil with a clay under it—this with us is called woodcock soil. The next seven acres (a hill) were on the top a strong clay, and the lower part a mixed soil—the last was light rich land. We plough very strong land with a pair of horses abreast, and one man, who holds the plough and by a rope guides the horses.

For one Acre.

Seed five pecks, at 6s. a bushel, sowed,	0	7	6
Superior produce eight bushels; at 5s. a bushel,	2	0	0
Superior value to sown, 6d. a bushel,	0	4	0

£. 2 11 6

Expence of setting 0 10 6

Balance in favour of setting, £. 2 1 0

O 2

So

So that the farmer, by this method, gains here the above balance; benefits society nine bushels and one peck; and at the same time feeds twenty-five extra mouths: What a satisfaction to a benevolent mind!

When wheat is very full of weeds, it is customary with neat farmers to hoe it by hand both set and sown; and they gain more by it than the seven shillings and six-pence per acre paid for the labour.

Fallows or summer lays, as we call them, on heavy land, are constantly sown with turnips, or sometimes planted with cabbages; the turnips are drawn, and the cabbages cut and carried to an inclosure, either at the barn door, or in the corner of the field, made with bush faggots, and well littered with straw or haulm. And I am certain, that ninety acres, one third or perhaps half ploughed, will maintain, by means of turnips and artificial grasses, at least as many cattle as the whole in grass.

Cabbages make execrable butter, but are excellent for fattening cattle, having an astringent quality so opposite to that of the turnip, that six weeks are saved in the fattening a beast; in which instance, not only the saving of time, but of feed also, is no inconsiderable consequence to the farmer.

The sort raised here is the Tallow Loaf, or Drum-Head Cabbage; but it being too tender to bear the frost, I planted some of this sort and the common purple cabbage used for pickling (it being the hardest I know of) alternately; and when the seed pods were perfectly formed, I cut down the purple and left the other for seed; this had the desired effect; and produced a mixt stock of a deep green colour with purple veins, retaining the size of the Drum Head, and acquiring the hardness of the purple. We have tried the Scotch cabbage, but found them so slow in their growth, that they would not answer unless sown in autumn and planted in beds, the expence of labour, by this means, eating up the profit.

It is to be remarked, that the frost and cold weather in this eastern part of the kingdom, prevent our sowing till the end of February always, often till some time in March, and the sort I have experienced do very well at that time, requiring only to be taken out of the seed bed and planted in the field, at eighteen inches distance each way.

Turnips are always twice, and often three times hand-hoed with a nine-inch hoe—the work requires considerable dexterity; as the plants which are not to be hoed up, should be left regularly at a foot distance from each other, and the hoeing must be begun before the plants are too forward. A farmer who

who has not been used to this practice, and sees the withered plants two or three days after hoeing, will be frightened, and think his whole crop is destroyed, as I have experienced, but without reason, as by this process the turnips will come to twelve, and even sixteen or twenty pounds weight without their leaves: But in order to come to this weight, the manure must be very different from any thing I have seen in the west of England; and perhaps to make turnips answer to the farmer as they do with us, agriculture must be brought to the same degree of perfection as it is in Norfolk, Hertfordshire, some parts of Essex, and this county; the particulars of which, with all their minutia, it may be impossible to convey in writing; but should the Bath Society desire any information which I can give them upon the subject, I will answer their enquiries to the best of my ability.

The price of hoeing turnips is four shillings and six-pence per acre the first time; two shillings and six-pence the second, and about two shillings or two shillings and six-pence the third, when necessary. In order to understand the above, it is to be remarked, that no good labourer here will work where wages and privileges do not amount to one shilling and six-pence a day in winter, and two shillings in summer; for which reason we generally put out our work by the peice; and hoeing turnips is done by this method.

ART. XXIV. A Receipt to take Rust from Iron.

TAKE eight pounds of hog's lard, and dissolve in it four ounces of camphor over the fire; then take it off, and when near cold, stir into it as much black lead powder as will make it of a leaden colour; apply it hot to the iron, and in two days wipe it clean off.

ART. XXV. A Composition to preserve Boots and Shoes.

IN article 34 in the Premium Book of the Bath Society, I find a composition wanted to secure boots and shoes from taking water. From long experience of its use, I beg leave to recommend the following as being fully adequate to the purpose.

Take one pound of sheep's suet melted and strained; four ounces of bees-wax; two ounces of Venice turpentine; mix and melt them together over a fire; and when used, apply the
melted

melted composition with a soft brush after the leather is well cleaned from dirt, letting it sink in by a moderate fire.

S—e, Jan. 12, 1778. S. C.

ART. XXVL Another Answer to the Arithmetical Question in the Magazine for January, Pag. 20.

Mr. SYLVAN.

YOUR correspondent *Pethertonienfis* may find the practical rule he requires in Welsh's Arithmetic, vol. 2. page 103; but lest that work should not be at hand, permit me to transcribe it for his use, and that of your other readers.

" Having the price of 1 *cwt.* given, to find the price of 1 *lb.*

RULE. To the given number of pounds annex 0, if there are no shillings given (or if the odd money is less than two shillings). But if there are shillings given, then to the pounds annex half the greatest even number in the given shillings (rejecting the rest). Then from the pounds thus increased, subtract the seventh part thereof (rejecting the remainder of the division) the remainder is the answer in farthings.

Note.—If the price is given in shillings, 'tis evident by the above rule, that the seventh part of half these shillings, subtracted therefrom, will be the answer in farthings."

THE INVESTIGATION.

1 *cwt.* for 5*l.* 12*s.* Quere, the price per *lb.*?

The 5*l.* with 6*s.* (half 12*s.*) annexed, will stand thus,

The seventh part of which is

56
8

Which, subtracted, leaves 48 = the number of farthings equal to 1*s.* per *lb.*

This rule will never err a farthing per *lb.*

I am, Sir,

Your friend and servant,

M. RECORCK.

P O E T R Y.

The Prodigal Son—of a Taylor.

A London Taylor, as 'tis said,
By buck'ram, canvas, tape, and
thread,
Hair-cloths, and wadding, silk, & twist,
And all the long expensive list,
With which their uncouth bills abound,
Tho' rarely in their garments found;
With these and other arts in trade,
He soon a handsome fortune made,
And did what few had ever done,
Left Thirty Thousand to his son!

The Son, a gay young swagg'ring
blade,
Abhor'd the very name of trade;
And lest reflections should be thrown
On him, resolv'd to leave the town,
And travel where he was not known.

With gilded coach and liveries gay,
To Oxford first he took his way;
The bucks and beaus his taste admire,
His equipage and rich attire.
But nothing was so much ador'd
As his fine silver-hilted sword;
Tho' small and short 'twas vastly neat,
The sight was deem'd a perfect treat.
Beau Banter begg'd to have a look,
But when the sword in hand he took,
He swore by Gad it was an odd thing,
And look'd just like a taylor's bodkin.
Beau Shred was hurt by this expression,
And thought they knew his mean pro-
fession:

Sheathing his sword, he sneak'd away,
And drove for *Glo'ster* that same day.
There soon he found new cause for
grief,

For dining on some fine roast beef,
They ask'd him which he did prefer,
Some *cabbage*, or a cucumber.
What was design'd a compliment,
He thought severe reflection meant:
His stomach turn'd, he could not eat,
So made an ungentle retreat.
Next day left *Glo'ster* in great wrath,
And bid his coachman drive to *Bath*;
There he suspected fresh abuse,
Because the dinner was *roast pork*.
And that he might no more be jeer'd,
For *Exeter* directly steer'd;
There with the beaux he drank about,
Until he fear'd they'd found him out.

His glass not fill'd, as was his rule,
They said 'twas not a *thimble-full*.
The name of *Thimble* was enough,—
He paid his reckoning, and went off.
Next day to *Plymouth* he remov'd,
There still he unsuccessful prov'd;
For tho' he fill'd his glass or cup,
He did not always drink it up:
The toppers mark'd how he behav'd,
And said, a *remnant* should be sav'd.
The name of *Remnant* gall'd him so,
He then resolv'd for *York* to go,
There fill'd his bumper to the top,
And always fairly drank it up.
Well done, says Jack, a buck of *York*,
You go thro' *stitch*, Sir, with your work;
The name of *Stitch* was such reproach,
He rung the bell, and call'd the coach;
But ere he went, enquiry made,
By what means they'd found out his
trade.

You put the cap on, and it fits,
Reply'd one of the *Yorkshire* wits,
Our words in common acceptation,
Could not point your occupation;
'Twas you yourself gave us the clue,
To find out both your trade and you.
Proud coxcombs and fantastick beaux,
In every place themselves expose;
They travel far at great expence,
To show their wealth, and want of
sense:

But take this for a standing rule,
There's no disguise will screen a fool.

HENRY and LUCY. A Ballad.

By a L A D Y.

WHERE Kennet rolls his silver
tide
In Berkshire's fertile lands,
Beneath a hill whose shelter hides
A pleasant cottage stands.
Where Lucy lives divinely fair
As in the mountain snow:
By nature drest her auburn hair
In artless ringlets flow.
Her eyes a bright celestial blue
Such as the heaven shews;
Her checks display as fair a hue
As does the new-blown rose.

Full many a lovely youth had strove,
But yet had strove in vain,
To win this beautiful maid to love,
And soften her disdain.

For happy in herself she liv'd,
Contented with her fate;
Nor envy'd ought that fortune gave,
Nor wish'd to change her state.

And thus, till now she might remain,
Nor yet have learn'd to prove,
Had not the gentle Henry came,
The pleasing pains of love.

Henry adorn'd with every grace
Of person and of mind,
In whose intelligible face
Each innate virtue shin'd.

A mutual love each heart conceiv'd,
Nor long conceal'd the flame,
An honest mind cannot deceive,
And virtue fears no shame.

The setting sun—the rising morn
Is witness to their joys,
Blest in themselves they justly scorn
The world and all its noise.

Nor seek, but in the shady grove,
And flowery field to find,
Those joys which only dwell where love
And innocence are join'd.

Around their nest the lowly cot
A fragrant woodbine twines,
And thro' their garden's humble spot
A gentle streamlet winds;

Here Henry with a lover's care
Has planted every flower,
And with his Lucy oft repairs
To spend an evening hour.

His Lucy's smiles like magic charms
Can banish every care,
And Lucy never dreams of harms
While gentle Henry's near.

Oft as they range the sunny mead
They nature's book explore,
The God in all his works they read,
And while they read, adore.

Thus pass their lives, one gentle calm
Of friendship, love, and peace.
For virtue guards from every harm,
And leads them on to bliss.

Ye great! who Fortune's favours share,
Yet murmur at your lot,
That peace ye seek is settled here,
The tenant of this cot.

She flies from all the pomp of pride
And pageants of the great,
With truth and virtue to reside,
And blest the humble state.

ON TEARS.

HOW wisely Nature did decree
With the same eyes to weep and
see,

That having view'd the object vain,
We might be ready to complain;
And since the self-deluding sight,
In a false angle takes each height;
These tears, which better measure all,
Like wat'ry lines and plummets fall,

I have through every garden been
Among the red, the white, and green
And yet from all the flowers I saw,
No honey but these tears could draw
So the all-seeing sun, each day,
Distills the world with eth'ric ray;
But finds the essence only showers,
Which strait, in pity, back he pours,
So Magdalene, in tears more wise,
Dissolv'd those captivating eyes,
Whose liquid chains could flowing meet
To fetter her Redeemer's feet;
Not full sails hasting laden home:
Nor the chaste lady's pregnant womb:
Nor Cynthia teeming, shows so fair,
As two eyes, swollen with weeping are.
Ope then, my eyes, your double sluice,
And practise thus your noble use;
For others two can see or sleep,
But only human eyes can weep.

A SONG.

SICK of the town at once I flew
To Contemplation's rural seat;
Adieu I said I, vain world adieu,
Fools only study to be great:
The books, the lamp, the hermit's cell,
The moss-grown roof, and matted
floor,
All these I had—'twas mighty well,
And yet I wanted something more.
Back to the busy world again
I soon return'd, in hopes to find
Ease for imaginary pain,
Quiet of heart, and peace of mind;
Gay scenes of grandeur every hour
By turns my tickle fancy fill,
The world seem'd all within my pow'r,
But yet I wanted something still.
Cities and groves by turns were try'd,
'Twas all, ye fair, an idle tale,
CALLIA at length became a bride,
A bride to DAMON of the vale.
All nature smil'd the gloom was clear'd
DAMON was kind—I can't tell how,
Each place a paradise appear'd,
And CALLIA wanted nothing now.



T H E

FARMER'S MAGAZINE.

A P R I L, 1778.

A DISSERTATION *on the Progress and present State of*
AGRICULTURE. [Continued.]

American Husbandry.

PATAGONIA. **A**LL the country extending from Chili towards the South-sea to Paraguay, towards the Atlantic ocean, is called by the general name of Patagonia, and was discovered by Ferdinand Magellan, a brave Portuguese officer, in the year 1519, who sailed through the Streights, called by his name, from the North to the South-Sea.

The observations made by Magellan, and other navigators, are very imperfect, and the stories related of the gigantic size of its inhabitants, notwithstanding the late accounts, want confirmation: The difference may indeed be accounted for, by considering, that they are a wandering people, and divided into different nations; thus one nation may have appeared on the coast at one time, and a different one at another; however that may be, by all accounts given of them, they are an uncivilized and savage kind of people.

It extends from the thirty-fifth almost to the fifty-fourth degree of south latitude.

Patagonia is said to be unprovided with fresh water, but abounds in fine pastures, and produces an innumerable quantity of cattle and horses, from those which the Europeans first carried over thither.

PARAGUAY. This country was discovered by Sebastian Cabot in 1526, it is bounded on the north by the river of the

Amazons, on the south by Patagonia, on the east by the Brazils, and on the west by Chili and Peru; it is about 1500 miles long, and 900 broad. It is diversified with forests, mountains, lowlands (great part of the year under water) fertile meadows, and morasses.

The climate in general is moderate, and the soil fertile, abounding with timber and fruit-trees, and produces abundance of cotton, sugar, indigo, pimento, ipecacuanha, and variety of other drugs; and above all the herb Paraguay, which it exports to the value of one hundred thousand pounds annually, to the provinces of Chili and Peru: It is the leaf of a middle-sized tree, resembling an orange tree, in taste not unlike mallows. There are three gatherings, first the buds before it unfolds its leaves, which is the best, but soonest subject to decay; the second gathering is the full-grown leaves at the first expansion; the third is when the leaves have remained on sometime after they are full blown: the leaves are roasted, and then kept in pits dug in the ground, to be ready for sale. These trees grow principally in the morasses on the east side of Paraguay, but now are distributed all over the country. The manner of using it is, to dry and reduce it almost to powder, then put it into a cup with lemon juice and sugar, boiling water is then poured on it, and the liquor drank as soon as may be: It is supposed to be serviceable in all disorders of the head, breast, and stomach; it preserves the miners from the noxious mineral steams with which they would otherwise be suffocated; is a sovereign remedy in putrid fevers and the scurvy; allays hunger; and purifies all kind of water, by infusing it therein.

This country is so fruitful in cattle, that they are slaughtered merely for their hides.

Among the other productions we may reckon tobacco, corn, rice, wool, &c.

Although we would not at all interfere with political matters of any sort, yet it may be expected we should say something of the government of Paraguay, as it seems so essentially different from the rest of the world.

A few Jesuits, who went over to Paraguay, converted about fifty families of the natives, who soon persuaded the rest to follow their example, and they became converts to Christianity; thus instruction and gentle means produced what the arms of Spain and Portugal in vain attempted: The Jesuits learned their language, and conformed to their manners, educated their children, and instructed them in social duties, obtaining by this an ascendant over their minds and affections. This, says

says a philosopher, is the gentle sway of opinion, the only one perhaps, that is lawful for one man to exercise over another, because it makes those people happy who submit to it.

BRAZIL. This country was accidentally discovered by Pedro Alvarez Capralis, a Portuguese admiral bound for the East-Indies, in the year 1501, who in the year 1549 built the City of Salvador, and made the first settlement. The French, Spaniards, and Dutch, have severally endeavoured to make themselves masters of this country, but in vain; the contest with the latter was severe, but ended at last favourably to the Portuguese, who have possessed it ever since.

It extends from the river La Plata, in the 35th of south latitude, to the river of the Amazons under the equator, and is reported to extend from east to west, about 900 miles, but the interior parts are little known.

The aspect of the country from the sea, is rough and uneven, but on a more narrow inspection, nothing can be more delightful, the eminencies being covered with woods, and the valleys and savannahs with the most refreshing verdure.

In the northern parts they are subject to winds, storms, and tornadoes, like other countries in the same parallel. The southern provinces are more delightful, temperate, and fruitful.

From the heat of the climate in some parts are produced many insects and reptiles, among which is the liboya, or the roebuck snake, a serpent of the most amazing size, extending to the length of thirty feet, and several in circumference; the rattlesnake grows to an immense length; another serpent called ibibakoba, seven yards in length, is possessed of a poison instantly fatal to human kind. Here are also scorpions, ant-bears, tygers, porcupines, &c. and a prodigious number and variety of the most beautiful birds.

The chief commodities are diamonds, and other precious stones, chrystals, gold, ebony, Brazil wood, dying wood, sugar, tobacco, balsams, indigo, sweetmeats, mastic and other gums, cotton, &c. The mines of gold and diamonds were first opened in 1681, and have since yielded annually about five millions sterling, of which a fifth part is reserved, as the property of the king of Portugal.

Brazil is divided into provinces or captainships.

South division contains the
the captainships of

{ Rio Janeiro,
St. Vincent,
Del Rey.

P 2

Middle

Middle division contains the captainships of	{ Seregippe, Bahia, Ilheos, Porto Seguro, Spirito Sancto.
North division contains the captainships of	{ Para, Marignon, Siara, Petaguez, Rio Grande, Payraba, Tamara, Pernambucco.

There are also some small islands on the coast of Brazil, at which ships touch for provisions in their voyage to the south-sea, particularly Fernando de Norona, St. Barbara, and St. Catherine's.

The island of Fernando de Norona lies in three degrees, fifty minutes south latitude, is about twenty miles in circumference, and in a few places only, capable of tillage. This does not proceed from a defect in the soil, which produces every species of grain and fruits common in the torrid zone, so much as a want of moisture. Great plenty of fish is found in the harbours, and during the season of the turtles laying their eggs, from December to April, the coast is covered with them, but after that they disappear.

St. Barbara is a small island situated near the coast of Brazil, in eighteen degrees six minutes south latitude, is about twelve miles in circumference, but very fertile; having no good harbours, it is but little frequented.

The island of St. Catherine's is situated in twenty-seven degrees, forty-five minutes south latitude; is about twenty-seven miles in length, and six in breadth, and lies about ten miles distant east from the coast of Brazil. The soil is very luxuriant, producing fruits of most kinds spontaneously. The ground is covered with one continued forest of trees, of a perpetual verdure, which, from the exuberance of the soil, are so entangled with briars, thorns, and underwood, as to form a thicket absolutely impenetrable, except by some narrow pathways which the inhabitants have made for their own convenience. These, with a few spots cleared for plantations along the shore, facing the continent, are the only uncovered parts of the island. The woods

woods are extremely fragrant, from the many aromatic shrubs with which they abound.

This island produces pine-apples, peaches, apricots, grapes, oranges, lemons, citrons, melons, maize, plantains, onions, and potatoes.

A great number of black cattle, of a species resembling buffaloes, are found running wild about the island; there are also monkeys, parrots, and pheasants.

The harbours and bays are supplied with plenty of the most excellent fish of various kinds. The island has great plenty of excellent fresh water.

AMAZONIA. This country is so called from a fabulous relation of Orellana, who travelled through it, and said he was opposed by an army of warlike women. Perhaps he was deceived by the natives not having beards.

It is a country of great extent, about 2200 miles long, and about 960 broad, bounded on the north by Terra Firma, on the south by part of Brazil and Paraguay, on the east by another part of Brazil and the Atlantic ocean, and on the west by Peru, from whence rises the river of the Amazons, supposed to be the greatest in the world.

The air is warm but tolerable. The soil is very fertile, and produces cocoa-nuts, pine-apples, bananas, guavas, plantains, and a great number of fruits.

Among the trees are found the cedar, iron-wood, oak, ebony, logwood, &c. Other productions are tobacco, cotton, sugar-canes, maize, potatoes, yams, honey, sarsaparilla, &c.

The woods abound with wild beasts and game, and the rivers abound with fish, but the great number of serpents, crocodiles, and alligators, render fishing exceedingly dangerous.

[*To be continued.*]

ART. II. *Expeditious Method of taking Potatoes out of the Ground.*

Mr. SYLVAN,

AS I think your Magazine is a very useful publication, and that practice is likely to be of more use than theory, I make bold to trouble you with my method of taking up potatoes. I need not dwell upon the utility of planting so useful a root as that of the potatoe, which you have already done in a former number. As I plant annually about three acres of land with potatoes, the expence of taking them up used to run away

away with great part of the profit, 40s. per acre, which was done by three-grained forks. I was a great while thinking it might be done to advantage with the plough, and at last I put it in practice as follows:

I take a light plough without a coulter, and with one horse only, which I put in the furrow, or outside of the land, and plough a furrow round the same, having six or eight boys or girls following or rather stationed one opposite another, to gather up all they can see in baskets, emptying them upon the next lands; in this manner I plough round and round, till I have got to the ridge or center of it; then I take a harrow, and go once or twice in a place, the children gathering all they can see as before; then I begin the ridge and plough it over again, the children still minding their work, till I am got to the furrow, when I take the harrow as before, &c. Thus they are got very clean out of the ground, without any being cut or bruised, (the case generally when taken up by forks) as the share of the plough goes under the roots, and a saving is made of 30 shillings per acre, for I have taken up more than sixty bushels a day; another advantage is, the work is expeditiously performed before the bad weather comes on, or if the land is intended for wheat, the ploughings will forward the work of tillage necessary for the occasion, and is nearly equal in value to the expence and trouble of the whole.

Thus, Sir, if you think these hints worthy your notice, and the attention of your readers, I beg you will insert them, and if any of your correspondents will send an account of their different methods used in planting them, it would oblige many, and in particular, your's, &c.

Knighton, near Leicester.

I. A,

ART. III. *An approved Method of preserving young Trees from Rabbits.*

Mr. SYLVAN,

THE following method was some years ago communicated to the Dublin Society, and was by them approved of, and the receipt is cheap and efficacious. Rabbits are supposed, and in general with justice to be the very worst of enemies to a young plantation of trees, and every good method of defending them from their ravages must be valuable: the insertion of it in your Magazine will oblige, Sir, your's,

Dundalk, Jan. 3, 1778.

R. F.
Take

Take any quantity of tar, and mix with it about six times its weight of kitchen grease; let the stems of the trees be brushed with this mixture as high as the rabbits can reach, and they will not touch them.

[We are not sufficiently acquainted with the nature of rabbits, to warrant the efficacy of the receipt our Correspondent has sent us, but we think it bids fair to answer, and insert it at his desire].

ART. IV. Method of making hard Water soft.

SIR,

SEEING in the Farmer's Magazine a list of premiums offered by the Bath Agriculture Society, as an encouragement to the progress of useful knowledge, I was induced to make some experiment relative to the softening of hard water without the use of chalk, not for the sake of the premium only, but to be, as far as in me lies, an useful member of Society: The process is as follows: Take of the cleanest Pot-ash 2 oz. dissolve it by boiling in a quarter of a pint of water, — then take half an ounce of this solution, throw it into a gallon of hard water, shake it; let it settle for two or three hours, and it will be quite transparent, and fit for use. How far I have succeeded, I submit to the judgment of the Society, and am, your most obedient,

J. H.

[We think, that for the mere purpose of softening water for washing, &c. the method here proposed will answer the intent, but to what culinary or other purposes can it be applied? We apprehend the Society meant to obtain, as nearly as could be, within the compass of human invention, what is not naturally produced in every country, if we except rain, PURE SIMPLE ELEMENT, free of all extraneous matter which by its hardness renders it unfit for use: Chalk does this in a most eminent degree, depriving it of its hardness without imparting any thing injurious in lieu of it: We apprehend this cannot be the case with an alkaline salt, such as is here recommended, and which contains properties that must in some cases be opposite to the intention, and consequently prove in those instances detrimental. Could chalk always be obtained in all places, as easily as it is in some counties of this kingdom, we are apt to think the Society would not have offered the premium for a substitute to what is so excellent.

What they seem to aim at, is the discovery of something, every where easily obtained, as innocent and efficacious as chalk. Such a discovery, we dare venture to pronounce, would be of general benefit to mankind, and consequently deserves mature consideration and attention.]

ART

ART. V. *Premiums adjudged by the Committee of the Sussex Society, for the Encouragement of Agriculture, &c. held at the Coffee-House, LEWES, April 2, 1777.*

JOHN BAKER HOLROYD, Esq; Vice-President, in the Chair.

TO James Dalrymple, Esq; of Mayfield, a medal, or five guineas, for the best experiment on Potatoes. *

To the Rev. Henry Poole, for the earliest Green Food for cattle, horses, &c. a medal, or five guineas. †

To John Baker Holroyd, Esq; a medal, or five guineas, for hoeing the greatest quantity of wheat, viz. 22 acres, 2 roods. —The wheat was sown in Mr Duckett's manner.

To John Baker Holroyd, Esq; a medal, or five guineas, for the best two-year old bull.

To J. B. Holroyd, Esq; a medal or five guineas, for the best two-year old ram.

To J. B. Holroyd, Esq; a medal, or five guineas, for draining in the best, most effectual, and cheapest manner, the greatest quantity of land, viz. 2319 perches.

To Mr. John Bowling, of Uckfield, a medal, or five guineas, for enclosing and preparing for tillage, the greatest quantity of barren or waste land, viz. 5 A. 1 R. 13 P.

To Mr. Scutt, of Brighthelmstone, a medal, or five guineas, for clearing the greatest quantity of land from Whins, Heaths, &c. and preparing the same for tillage, viz. 9 A.

To Mr. James Chapman, of Ruspur, three guineas, for ploughing the greatest number of acres with oxen, in proportion to the number of acres tilled.

To Mary Stevens, of Seaford, three guineas, first premium, for hoeing turnips, viz. 19 A. 1 R.

To Sarah Dawkins, of Alciston, two guineas, second premium, for hoeing turnips, viz. 16 A.

To Joseph Taylor, bailiff and servant in husbandry to the Rev. Mr. Davies, of Glynde, three guineas, for living longest in one place, viz. 30 years.

Gratuities were given to Robert Smith, Thomas Humphries, and Sarah French, for their long services. The former lived forty-eight years in the family of Mr. Scutt, of Brighthelmstone, as shepherd, but not being a domestic servant, he was adjudged not entitled to the premium.

A memorial from Mr. John Stell, of Hastings, was presented, setting forth that he had established manufactures of Crape, Gauze,

* Mr. Dalrymple's experiment is given in the Farmer's Mag. pag 67.

† See page 67 — 3.

Gauze, Persians, Sarfenets, and Sattens, at Winchelsea, and Hastings, whereby a great number of children, mostly girls, were employed.

Ordered, That the memorial be laid before the annual meeting; and that the thanks of the Committee be given to Mr. Stell, for the great benefit he has done that part of the country in which he resides.

Mr. Holroyd most generously desired the premiums, which were adjudged to him, amounting to twenty guineas, might be paid to the Treasurer, for the account of the Society.

ART. V. *Proceedings of the Sussex Society for the Encouragement of Agriculture and Manufactures, held at LEWES, August 1, 1777.*

The DUKE OF RICHMOND, President, in the Chair.

RESOLVED,

THAT the thanks of this Society, and a gratuity of ten guineas be given to Mr. John Stell, of Hastings, for having established the Manufactures of Crape, &c. as mentioned in the preceding Article.

The following premiums were adjudged,

To John Baker Holroyd, Esq; for the best Draught Stallion, twenty guineas.

To Launcelot Harrison, Esq; for the best two year old Ram, a medal, or five guineas.

To Mr. William Falconer, of Plumpton, for the best two-year old Bull, a medal, or five guineas.

Mr. Holroyd desired the premium, adjudged to him, might be paid to the Treasurer for the use of the Society.

The following Gentlemen were chosen a Committee for adjudging the premiums offered for the year 1777, to meet at the Coffee-house at Lewes, on Wednesday in Easter week, 1778.

Col. Hay,
Mr. Poole,
Rev. Mr. Poole,
Rev. Mr. Porter,
Mr. Godfrey Webster,
Rev. Mr. D'Oyly,
Mr. C. Goring,
Mr. Harrison,
Mr. Humphries,
Mr. Campion,

Vol. III.

Mr. G. Courthop, jun.
Rev. W. Woodward.
Mr. Dalrymple,
Right Hon. Sir John Shelly,
Sir Ferdinando Poole,
Mr. Medley,
Mr. Colvil Bridger,
Hon. Mr. Trevor,
Mr. Holroyd,

Q

The

The following premiums are agreed on for the year 1778.

1. For the best crop of Mazagan beans, drilled or dibbled, turnips to be sown in the intervals with the last hoeing, not less than five acres, a silver cup, value five guineas.
2. For improving the greatest quantity of meadow or pasture, by occasionally overflowing it, not less than five acres, a silver cup, value five guineas.
3. For the person who shall make the best reservoir on his farm for the reception of dung water, a silver cup, value five guineas.
4. For discovering the best green food for cattle and sheep, after the decay of turnips, and before clover and other grasses are sufficiently forward, the experiment to be made on not less than two acres, a silver cup, value five guineas.
5. For draining, in the best, cheapest, and most effectual manner, the greatest quantity of wet springy clay, or morass ground, not less than one thousand perches or rods, a silver cup, value five guineas.
6. For ploughing the greatest number of acres with oxen, in proportion to the number of acres tilled, three guineas.
7. For planting and gathering the greatest quantity of potatoes, on not less than three acres, a silver cup, value five guineas.
8. To the cottager or person, whose house and land do not exceed five pounds per annum, who shall plant and gather the greatest quantity of potatoes, not less than one rood, or eighty bushels per rood, three guineas.
9. For the next greatest quantity, not less than half a rood, two guineas.
10. For transplanting roots of wheat from those parts of the field where they stand thickest, to such parts as have been injured by worms, or other accidents, not less than one acre, two guineas. N. B. It is required that a comparative trial be also made by sowing and hoeing in grain, on part of the spots so injured.
11. For hoeing in the best manner, the greatest quantity of wheat, not less than fifteen acres, a silver cup, value five guineas.
12. For the second greatest quantity, not less than eight acres, two guineas.
13. To the woman or girl who shall hoe the greatest quantity of wheat, not less than five acres, three guineas.
14. For the next greatest quantity, not less than three acres, two guineas.
15. To the woman or girl who shall hoe the greatest quantity of turnips, not less than five acres, three guineas.

16 For

16. For the next greatest quantity, not less than three acres, two guineas.

17. For enclosing and preparing in the best and most effectual manner, for tillage, pasture, or meadow, the greatest quantity of barren or waste land, not less than five acres, a silver cup value five guineas. N. B. It is required that the land, before improvement, be absolutely uncultivated, and in a great measure useless.

18. To the person who shall produce the best two year old bull, bred upon land in his own occupation, a silver cup, value five guineas.

19. For the best two year old ram, &c. the same premium.

20. For the best four year old colt or filley, bred on land, &c. the same premium.

N. B. The three last premiums will be adjudged at Lewes, the last day of next races, at eleven o'clock in the forenoon.

21. To the person who shall instruct children, &c. in weaving or making black silk lace, an annual premium of five guineas, for five years certain. N. B. The person to reside at Lewes, and to have the advantage of the childrens work for a certain time, or receive a weekly gratuity from each, at the option of the teacher.

22. To the person who from the 1st of Jan. 1778, to the 1st of Jan. 1779, shall employ in any manufacture the greatest number of girls, not less than twenty, and not exceeding the age of thirteen years, ten guineas.

23. For the greatest quantity of worsted or linen yarn, wrought in any parish workhouse in one year, from next Easter, in proportion to the number of persons employed, medals to the churchwardens and overseers; and ten guineas, part to be distributed to the diligent poor, and the rest, according to the discretion of the officers, for the use of the parish.

24. To any servant in husbandry, who has lived the longest in one place, not less than ten years, three guineas.

GENERAL CONDITIONS.

The Society reserve to themselves the power of giving, in all cases such part only of any premium as the performance shall be judged to deserve; or in case of want of merit, to withhold the premium entirely.

Persons claiming with merit, to whom premiums have not been adjudged, shall have their travelling expences and attendance paid, at the discretion of the Premium Committee.

No premium shall be given, except to a member of the Society, without a certificate from a neighbouring Justice of the Peace and the Minister or Curate of the parish, that the claimant has performed what is required for obtaining the premium.

A candidate for a premium, or person applying for a bounty, being detected in any attempt to impose on the Society, shall forfeit such premium, or bounty, and be incapable of obtaining any for the future.

The premiums of this Society are only designed for the inhabitants of the county of Sussex.

By an acre is meant not the common mensuration, including hedges, ditches, pits, &c. but a statute acre, actually improved or bearing a crop.

Every subscribing member of this Society is deemed to continue as such, unless he shall give notice in writing to the treasurer of declining his subscription, on or before the annual meeting.

All claims for premiums, petitions, or memorials, to be lodged, at least ten days before the meeting of the Premium Committee, with JOHN BAKER HOLROYD, Esq; at *Sheffield Place*; to whom the members are requested to communicate in writing, their observations upon any defect or wrong management in the Agriculture of their neighbourhoods, and their opinions concerning the best means of remedying such defect; also they are requested to communicate in writing, such experiments as they have made, which seem likely to be productive of advantage to the Public; and their opinions relative to all or any of the premiums, in order (if they are in any particular exceptionable) they may be better adapted to the general circumstances of the County.

Subscriptions to be paid to the Treasurer, Mr. JOHN MADGWICK, at *Lewes*.

ART. VI. *Mr Duckel's Method of Husbandry.*

[From Vol. II. of the Farmer's Tour through the East of England.]

ALL his fields are sand, of two sorts; one very light and rather poor; the other moist, black, and good. Most of his arable crops are cultivated in the drill method: His turnips, barley, oats, and wheat, are chiefly in rows; the turnips 12 inches to two feet asunder; the wheat and oats from 9 to 12 inches equally distant. He hand-hoes all these crops sufficiently to keep them clean; and finds, from repeated experience, that the crops are better than in the broadcast method, at the same time that the land is kept much cleaner.—And one application of this mode is particularly useful:—he sows clover seed over his wheat or spring corn, just before the last hand-hoeing, which operation covers the seed in the compleatest manner. I viewed the crops, and the clover was as regular as possible.

Mr. Duckel's hedges are remarkably neat—they are of white-thorn only, very well plashed to secure them at bottom, and afterwards kept regularly clipped. The management of his borders, also, do him credit; he found them wide and quite overrun with bushes and rubbish; all this he has grubbed up, so that the plough goes quite to the edge—the fields are neater, at the same time that much land is gained.

All

All the tillage of his land is performed with ploughs of his own invention: first, with a trenching one with two shares, &c. that work one below another, paring off the turf or surface of the land, and turning it over; the lower one follows in the same furrow, and raising fresh earth buries the first. In this manner it cuts 12 inches deep with four horses, and does an acre a day. One very important use of this plough, is the burying twitch in sand land. Mr. Ducket's method, when his land is run much to twitch, is to bury it so deep as to admit the succeeding tillage above it; a large quantity of twitch buried turns to excellent manure; but if not sowed with hoeing crops, it will not be destroyed; hand-hoeing with this method will totally destroy its growth, but while rotting, it holds the land together and is of great service. This method Mr. Ducket finds to be far preferable to ploughing shallow, and trusting to the harrows for tearing out the twitch. The other is a treble plough on one bent beam. It turns three furrows at once; works with four horses, and does from three to four acres a day.

The method in which he drills his crops, of whatever sort, is the following: The land, when ready for the seed, is harrowed flat; then the drills are struck with a plough made on purpose. When the furrows are made, the corn, &c. is sown broad-cast, and the land harrowed; nine tenths of it rise in the rows, and very regularly.

ART. VII. *Expeditious Method of propagating Fruit-Trees and Flowering Shrubs.*

[By T. Barnes, Gardener to W. Thomson, Esq; at Elsham, Lincolnsh.]

THE difficulty of propagating some shrubs in the common way, and the small increase that can be made from others, by all the usual methods, brought it into my thoughts to try whether some expeditious manner could not be invented of raising a large number.

Every nurseryman will be glad to know this; for when he has got a new shrub, if he can raise twenty or thirty, instead of three or four, it will be a great increase of his profit: And in the same way, a gentleman, when such a thing falls into his hands, will be better pleased to supply all his friends at once, than a few at a time, and not oblige all under the compass of many years. I thought the thing might be done, and that made me resolve not to be disheartened at one or two trials.

It is about a year since I began the experiments; and between that time and this, I have tried them various ways upon four and twenty

twenty kinds of trees and shrubs of the fruit and flowering kinds; not trusting to one or two samples of each, but using several dozens of every kind, and trying them in all the different degrees of culture, according to their nature, from the stove to the open air. By these means the experiments amounted to many hundreds; and I kept a constant journal of them all, and that which deserves the preference, I have faithfully transmitted to the eye of the public.

The propagation of trees by layers and cuttings, shews, that if a piece of any kind be planted in the ground in such a manner that it takes root below, the upper part will furnish all the rest, and become a perfect tree.

If roots can be thus obtained, the rest follows in the course of nature.

But this is not universal, for some trees will not take root in either of these ways; and if they would, still the number is but small that be obtained by them, because it is but a certain part of the branches a tree can spare for that purpose.

On examining the cuttings which failed, I always found that the mischance happened by the rotting of that part of the cutting which was expected to send forth the roots; for the danger is, when it is fresh cut, and has no bark to cover it. I thought it natural, that if a method were used to keep that part from decay, all those cuttings would grow, which we usually see fail. Communicating my thoughts to a gentleman of knowledge, he not only confirmed my opinion by his own, but gave me a receipt for preserving the ends of cuttings from rotting; and desired me to try it afterwards upon smaller pieces than such as are commonly used; and upon single buds.

Every leaf upon the branch of a tree or shrub, has usually a young bud in its bosom; and it is certain each of these buds has in it the rudiments of a tree of the same kind; therefore it appeared reasonable to think, that every branch might afford as many new plants as there were leaves upon it, provided it were cut into so many pieces, and this same dressing could prevent the raw ends from decaying.

The advantage of such a practice appeared very plainly, for it must give many plants for one; and the thing seemed so agreeable to reason, that I resolved to try it.

Many mixtures of resinous substances have been proposed on this head, under the names of cements, and vegetable mummies, by Agricola and others; but the very best, upon careful and repeated experience, I have found to be this:

Melt

Melt together in a large earthen pipkin, two pound and a half of common pitch, and half a pound of turpentine. When they are melted, put in three quarters of an ounce of the powder of aloes; stir them altogether, and then set the matter on fire; when it has flamed a moment, cover it up close, and it will go out; then melt it well, and fire it again in the same manner.

This must be done three times, in the open air, for it would fire the house; and there must be a cover for the pipkin ready. After it has burnt the last time, melt it again, and put in three ounces of bees-wax shred very thin, and six drams of mastic in powder. Let all melt together till perfectly well mixed; strain through a coarse cloth in a pan, and set by to cool.

For use a piece must be broke off, and placed over a slow fire in a small pipkin; when melted spread it on the cutting where wanted, but not too hot.

This dressing will wholly keep out moisture, and the part covered over will never decay, while any principle of life remains in the rest; and this being secured, nature will do the business of growing.

This I have found true in practice; and by many trials in more kinds than one, I have found I could raise from any piece of a branch, as many good plants as there were leaves upon it.

ART. VIII. *A Receipt to make Writing-Ink.*

TO one quart of pure simple distilled water, put four ounces of blue galls bruised, two ounces of green copperas, and two ounces of gum arabic. Let all be well shaken or stirred about now and then, and in a little while it will be fit for use. It must be poured off clear, when wanted.

When this ink is first written with, it looks pale, but in a few hours will turn black, and as far as time can yet discover, will never change.

Rain water or soft river water will make good ink, but neither are so good as water distilled.

ART. IX. *To cure Convulsions in Children.*

TAKE an ounce of white sugar-candy in fine powder, drop in it 120 drops of the best oil of aniseed, rub them together in a mortar, then mix with them an ounce of sperma-ceti in powder.—The dose is 20 grains in a little breast milk, every 3 or 4 hours, or oftener as occasion requires.

ART.

ART. X. *A Table shewing into how many Shillings a Pound Weight of Silver hath been coined at several Times.*

Years	Fineness	s.	d.
28 Edward, I.	11oz. 2dwts.	20	3
20 Edward, III.	11 2 - -	22	6
27 - - -	11 2 - -	25	
9 Henry, V.	11 2 - -	30	
1 Henry, VI.	11 2 - -	37	6
4 - - -	11 2 - -	30	
24 - - -	11 2 - -	30	
39 - - -	11 2 - -	37	6
- Edward, IV.	11 2 - -	37	6
1 Richard, III.	11 2 - -	37	6
9 Henry, VII.	11 2 - -	37	6
1 Henry, VIII.	11 2 - -	45	
34 - - -	10 - - -	48	
36 - - -	6 - - -	48	
37 - - -	4 - - -	48	
1 Edward, VI.	4 - - -	48	
3 - - -	6 - - -	72	
4 - - -	3 - - -	72	
6 - - -	11 1 - -	60	
2 Mary,	11 - - -	60	
2 Elizabeth,	11 2 - -	60	
19 - - -	11 2 - -	60	
43 - - -	11 2 - -	62	

Which Standard has continued ever since.

ART. XI. *A Receipt for the Gravel.*

Mr. SYLVAN.

THE following simple remedy, I have known do very considerable service in that excruciating complaint, the Gravel, by a constant use of it for some years. I wish it to be publicly known, and therefore beg you to insert it in your Magazine; by so doing, you will much oblige, Sir, your's,
Salisbury.

F. G.

Take a common spoonful of new honey, and the same quantity of oatmeal, pour on them a quart of boiling water, and stir them for a little while.—The dose is a pint night and morning constantly.

ART.

ART. XII. *A Letter to the SECRETARY of the BATH AGRICULTURE SOCIETY.*

SIR,

I AM much honored by the approbation, which the information I conveyed to you in my last letter,* met with from the Gentlemen of your respectable Society, and in compliance with their wishes have endeavoured to answer the questions sent me to the best of my present information and judgment.

Q. What kind of soil was thy wheat set in, and what the annual value of the land?

A. The wheat was not upon my own land, but on that of a near neighbour, who had a more convenient opportunity of keeping it separated after harvest: I saw it set, and frequently viewed it untill it was reaped. The soil was light, inclined to sand, worth fifteen shillings per acre, being within five miles of Norwich.

Q. How long had the land been in clover and ray-grass, before it was broken up and set with wheat?

A. One year only; in this part of the country we very seldom suffer clover alone to continue longer, the natural grass after that time getting so much possession of the ground, as to render the second year's crop of clover of very little value.

Q. How deep were the holes dibbled, and what distance were the rows from each other?

A. The holes were dibbled about an inch deep, and the rows were upon the flag, about three or four inches from each other.

Q. Were there one or two rows on each flag?

A. Two rows, as before answered.

Q. How many grains were dropped in each hole, and was the crop hoed?

A. Two grains were intended to be dropped, but this is very uncertain, from the unskilfulness and carelessness of the children, who drop the corn in the holes.—This crop was not hoed, which although an excellent practice, and pretty much used here on random sown wheat, does not appear to be much wanted on the corn which is set.

Q. How many bushels per acre were produced on the whole two fields?

A. The experiment having been made with a view only of ascertaining the proportional product of the two methods, although that result was registered, I find upon a fresh enquiry

* See Farmer's Magazine, page 92.

made on this occasion, that the total product is forgotten.—The common average growth of wheat upon the farm is between twenty and twenty-four bushels per acre.

Q. Was the straw of the set wheat higher and flouter than the straw of the wheat which was sown; and which is most easily reaped?

A. The straw of my set wheat has always been stronger, not higher, and being clearer from weeds, and of more equal size and length, is more easily reaped.

Q. Do the millers in Norfolk in general prefer set wheat before that which is sown?—Is it more bulky in kernel, or whiter in flour, or both?

A. Those millers of whom I have asked the question, prefer the set wheat to that which is sown; in general it is the most even sample, that is, having less small corn intermixed with it;—othe. wise of the same size with the wheat which was sown.—I have never heard it observed by any that the flour was whiter.

Q. What kind of land does the setting wheat answer best in on the whole?

A. This has not yet been ascertained by proper trials. I am inclined to think that the produce of the set wheat would be greater in proportion, than that which is sown, on all ray-grass lay or other lands foul with twitch-grass, or other weeds.—I mean the difference would be greater, than on any other cleaner lands, as was the result of the two experiments I mentioned in my last letter.—When the land is so wet and stiff, that the seed cannot readily be covered by the bushes drawn over it; in that case I apprehend the corn would be better when sown.

[Another question we would wish to ask is,—what may be the weight of a bushel of set wheat?—what is the weight of a bushel of sown? as we suppose the weight to be a great criterion of its goodness. And we would esteem it a favor if this gentleman will particularly specify the contents of the bushel, as it varies so much in different counties.]

IN answer to that part of your letter, relative to the articles of lime and marl, although I shall beg leave to refer you to an ingenious book, lately published by Mr. James Anderson, of Monks-hill, in Aberdeenshire, for a more full, rational, and satisfactory account of their property and effects, than I have any where before met with, or can pretend to give; I will yet, before I conclude this letter, answer those questions you proposed

posed; touching the use we make of them in Norfolk; and first of marl, and the kind it is of.

Our farmers here use marl seldom or never on pasture land; but always on arable, from thirty to eighty loads, and upwards on an acre: They prefer laying it upon a clover and ray-grass layer alone, a year before it is ploughed in, so that it may unite more intimately with the upper part of the soil, and not be so soon buried by the plough, as it would be, when laid on and ploughed in immediately.

The kind they use is a white calcareous substance, like chalk, but fat and unctuous; when it is met with of any other colour, they will with difficulty be brought to believe it can be marl, as I some years since experienced, upon discovering in my park, a fine light brown or rather dove-coloured marl, with every other property like the white.

The effect of marl has been very great indeed in this county, advancing the rent of the lands upon which it has been laid, in some instances, from half a crown to ten shillings an acre and upwards: This improvement has chiefly been on light sandy soils, but it has been found beneficial on all.—The general opinion here is that it acts as a manure, as well as gives tenacity to the soil.

Our farmers after the first dressing, which is in too great a quantity to mix with the dung, (without more expence than they are willing to incur) do afterwards usually mix some in their compost heaps, and think it much improved thereby; when I say our farmers, I mean the Norfolk farmers, for I do not know that there is one marl-pit within two or three miles of this place, or any marl discovered, but what I mentioned to have found in my own park, which was applied wholly upon the grass thereof, being no more than what was taken out of a fosse I was making; not but there is plenty, if they knew it, but not being white, they do not know it when they meet with it.

Our use of lime is trivial, and no great benefit has been found to result from it, but this is entirely owing to its being used in such small proportions, as it was impossible could effect the least alteration.—In the same manner, and by a like management, dung or any other substance laid upon the land might be found of no use.

A method to destroy the fly, which makes such ravages on the turnip plant, remains, and I fear will yet continue, a desideratum in husbandry. One observation, which I have heard the farmers make, I have generally found to be true, which is;

R 2

—that

—that the mischief is greatest in the middle of the land, and I have frequently found, when the rest of the crop has been destroyed, that two or three ridges next the hedge-rows have escaped all injury. This with some other particularities carefully attended to, may hereafter lead to some method of preventing the evil.

H—1, March 28.

T. B.

[We advise the trial of lime-kiln wood-ashes, as recommended by our Correspondent T. L. in the Farmer's Magazine for February, page 57.]

ART. XIII. *Remedy for a Cold and Cough in a Horse.*

TAKE a quart of ale, warm it, and put thereto a quarter of a pound of treacle, one ounce of aniseeds in powder, half an ounce of coriander seeds in powder, half an ounce of liquorice powder, and three drams of nitre; stir all well together and give it to the horse at night, after his ordinary food.—The next morning give him a pail of warm water with a handful of oatmeal in it.

Let this course of medicine, &c. be repeated till the horse is cured.

It will likewise be necessary to take away some blood at the beginning.

ART. XIV. *Directions for managing the Kitchen Garden in May.*

MELONS require a good deal of care;—the early plants will now shew forth fruit plentifully, therefore to preserve this fruit, it will be necessary to keep a proper degree of heat in the beds, by occasional linings of hot dung, for a kindly warmth is necessary to promote the swelling of the fruit when set.

Fresh air must be admitted into the frames every day when the weather is mild and fine.

The glasses must be covered with mats every night during the month.

Water them now and then, but not too much, and that in a moderate day, shutting down the glasses immediately; about eight o'clock in the morning and three or four in the afternoon are the best times to water them, and care should be taken, that as little water as possible is poured over the fruit as it is setting.

Finish

Finish making hot-bed ridges for the melons under hand or bell-glasses in the first or second week at farthest; these ridges should be made of the best stable dung.

Observe the same directions for cucumbers, as are here given for melons.

About the latter end of the month sow cucumber seed in the natural ground for pickling, leaving five or six plants in a hole.

Plant a full crop of kidney beans, for a succession to those planted last month.

Any of the dwarf kinds may still be planted, but the best are the speckled dwarfs, and Battersea white dwarfs.

Plant also the running kinds of kidney beans.

In moist weather transplant Coss, Silesia, and other kinds of lettuce.

Sow lettuce seed at two or three different times; the Coss, Silesia, admirable cabbage, and brown Dutch are the proper kinds now to sow.

Weed your Asparagus beds.

Plant out capsicums for pickling.

Sow small sallating very often; sow spinach in an open spot.

Sow turnips, to be fit for the table, by the middle or latter end of July.

Weed carrots, parsneps, and onions, &c.

Transplant cabbage and Savoy plants for autumn and winter use.

Draw the earth about the stems of early cabbages and others.

The earliest cabbages may be assisted in loaving, by tying the leaves together with strong bafs or willow rinds, after they are bent or turned in.

Screen the young heads of cauliflowes from the wet and sun, by breaking down the leaves upon them.

Sow cauliflower seed for a Michaelmas crop.

Sow brocoli seed for the principal crop next spring, sow at two different times, for February, March, and April.

Sow borecole, and Savoy seed for spring use.

Plant Windsor, Toker, and Sandwich beans for latter crops in August, &c. and hoe those crops that are already up, drawing the earth about the stems; top those which are in bloom, for they will pod sooner and grow better.

Sow more peas to have a regular supply, at least twice in the month. Hoe the crops now growing, and draw the earth up to them, before you flick them.

Sow endive, parsley, radishes, celery, &c. for a latter crop.

Propagate aromatic plants by slips, or cuttings.

Thia

Thin apricots, peaches, and nectarines, where the fruit is too thick, for if too many are left upon the trees, they will deprive each other of a due share of nourishment, and injure the trees for two or three years to come.

Destroy snails, and weeds: fumigate your walls, &c. to destroy insects.

Let the branches of trees, &c. be occasionally watered, and for this purpose we recommend the use of an engine, made by Mr. Gray, Tinman, at Brentford, Middlesex.

ART. XIV. HOUSEKEEPER'S DIRECTORY.

[Continued from Page 100.]

To make Wine of English Grapes.

WHEN the vines are well grown, so as to bring full clusters, be careful to disencumber them of some part of their leaves that too much shade the grapes, but not so in the hot season, that the sun may not too swiftly draw away the moisture, and wither them. Stay not till they are all ripe at once, for then some will be over-ripe or burst, or incline to rot before the underlings come to perfection; but every two or three days pick off the choice and ripest grapes, and spread them in a dry shady place, taking care that they contract not heat or grow musty; so those on the clusters, having more juice to nourish them, will grow bigger, or be sooner ripe, and when you have got a sufficient quantity, put them into an open vessel, and bruise them well with your hands, breaking the stones as little as possible, for they would be likely to give the wine a disagreeable taste.

Having bruised the grapes well, untill they become a soft pulp, having a tap at the bottom of the cask, tie a haircloth over the faucet, and let out the liquor, which will run itself, as the best wine:—then take out the pulp, and press it gradually in a cyder press, till the liquor is drained out; when having a new cask well seasoned, and aired with a lighted rag dipped in brimstone, till it becomes dry, pour the liquor in, through a sieve funnel to stop the dregs.

Let it stand with a pebble-stone lightly laid on the bung-hole, to ferment and refine itself ten or twelve days; then draw it off gently into another vessel well seasoned, letting the dregs or lees remain behind in the first cask:—Stop it the same as before, untill it has quite done fermenting.

Thus

Thus from the common white grapes you may make a good white wine; the red grapes will produce a reddish wine, but if it should want colour, it may be heightened with the juice of elder-berries, or burnt sugar.

To make Raisin Wine.

Take three hundred weight of Malaga raisins not picked, put them into a hoghead of spring water; let it stand a fortnight, stirring it twice a day; then press it into a tub, and put to it a piece of bread toasted, and spread with yeast; let it ferment 24 hours; afterwards put the liquor into a vessel, where it may work 14 days longer; fill it up again as it works over, and when done working, stop it close.

To make Cowslip Wine.

Take a quantity of water, and to every gallon put 2 pounds of sugar; boil it about an hour, and then let it cool; put into it a toast, spread on both sides with yeast; add to the liquor an ounce and half of citron peel, and as much lemon peel, and let it work about 24 hours, when you must put in your cowslips, a peck to a gallon, with two lemons sliced thin, and a pint of mountain wine; let it stand a few days, and then tun it into a sweet cask.

To make Birch Wine.

In March bore a hole in a birch-tree, put in a faucet, and the juice will run two or three days together, without hurting the tree; then put in a peg to stop it, and the next year you may draw as much from the same hole; put to every gallon of liquor a quart of good honey, and stir it well together; boil it an hour, skim it well, and put in a few cloves, and a piece of lemon-peel; when it is almost cold, put as much yeast as will make it work like ale, and when it begins to settle, put it into a sweet cask, and when it has done working, stop it down.

Where the sweet of the honey is not so well approved, sugar may be used, two pounds or more to a gallon.

To make Orange Wine.

Put twelve pounds of the best powder sugar, and the whites of eight or ten eggs well beaten, into six gallons of spring-water, and boil it three quarters of an hour. When cold, put in six spoonfuls of yeast, and the juice of twelve lemons, which being pared must stand with two pounds of white sugar in a bowl or pan all night, and in the morning the top be skimmed off; put this syrup to the other, and then add the juice and outward rinds of fifty oranges.—Let all work together for two or three days, add two quarts of Mountain wine, and then put it into your cask.

To

To make Orange Wine with Raisins.

Take thirty pounds of Malaga raisins picked clean, chop them small, twenty large Seville oranges, ten pared very thin; boil the water and put five gallons of it hot on the raisins and orange-peel, stir it well together, cover it up, and let stand five days, stirring four or five times a day, then strain it through a sieve, pressing it as dry as you can, put it into a vessel, and add the juice of the twenty oranges, made into a syrup with a pound of fine sugar. After standing two days, put it into your cask, and when it has done fermenting, stop it close.

Another Way.

To half a hoghead of fresh made raisin wine, put in the juice of two hundred and fifty large Seville oranges made into a syrup, and half the rinds, pared very thin. Let the management then be as before.

Lemon wine is made like orange wine.

[*To be continued.*]

ART. XV. *Reference to the Copper-Plate of Mr. DUCKET'S Plough.*

[From Mr. Kent's Hints to Gentlemen of landed Property, Page 88.]

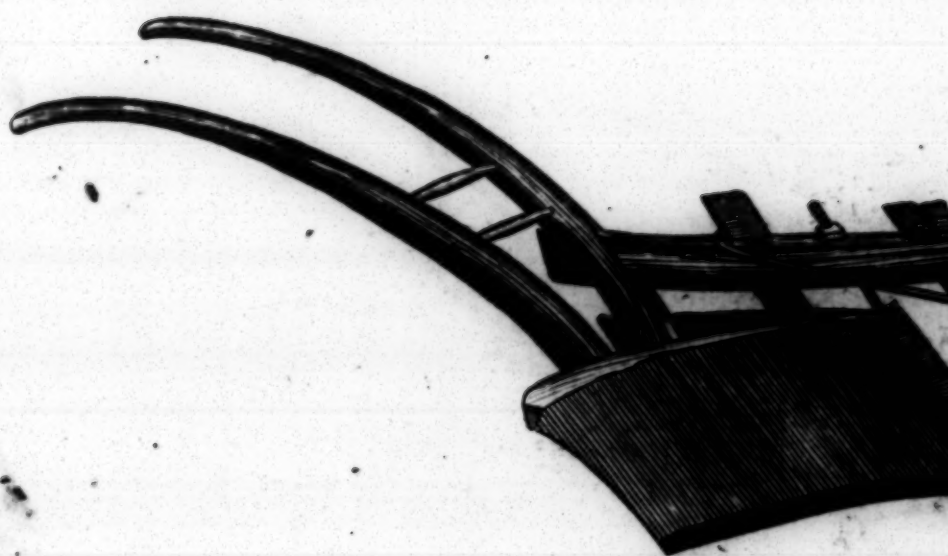
GROUND will sometimes be rough skinned, and exceedingly difficult to be cleaned; which I apprehend, induced some ingenious person, a few years since, to invent, and construct a plough, which remedies the inconvenience at once.

This plough has two separate shares, and coulter, but both are contrived to operate in the same line, or direction. They are each of them set to any depth, and lay the ground the same way. The first pares off the turf, or skin; the next ploughs up the clean body of earth, and throws it directly over the former, so as to bury it effectually: by which simple means the land is at once effectually cleaned. Whatever further working the ground may require, it may be done by shallower ploughs, to which particular crops may be suited: And there is no necessity for bringing the rough, or foul part up again, till it be entirely rotten. Sometimes two crops may be taken.

This method is practised much among the gardeners and farmers in the neighbourhood of London, and might be every where adopted, except where the land is stony, or remarkably shallow. Nor is this plough at all difficult to manage, or much harder to draw than one of an ordinary construction.

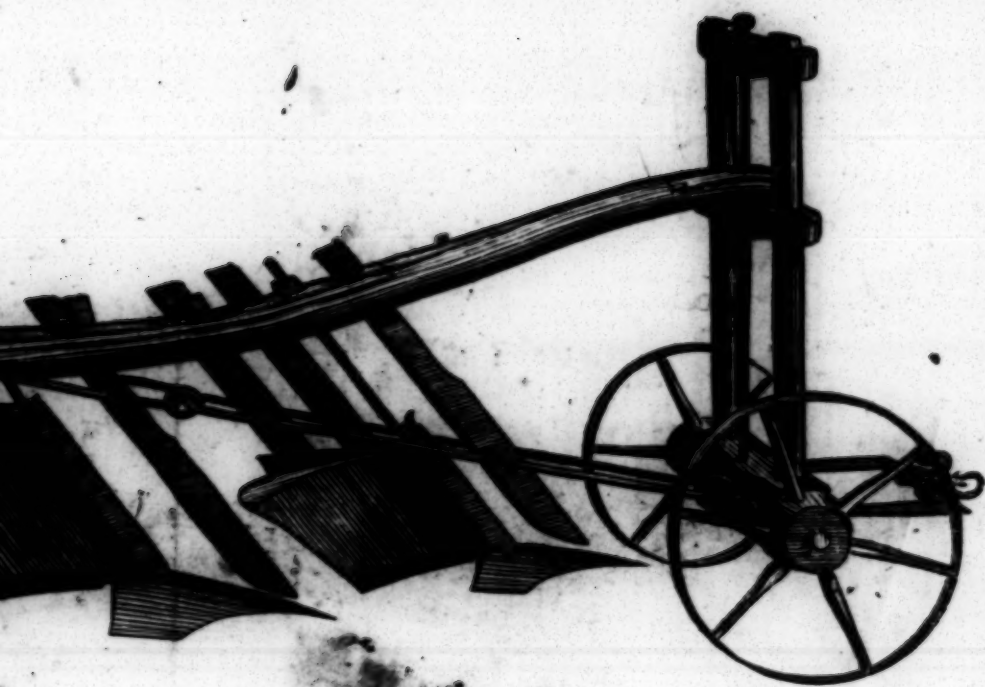
The Inventer may justly pride himself upon this discovery.

ART.



M.^r Duckett's Tre

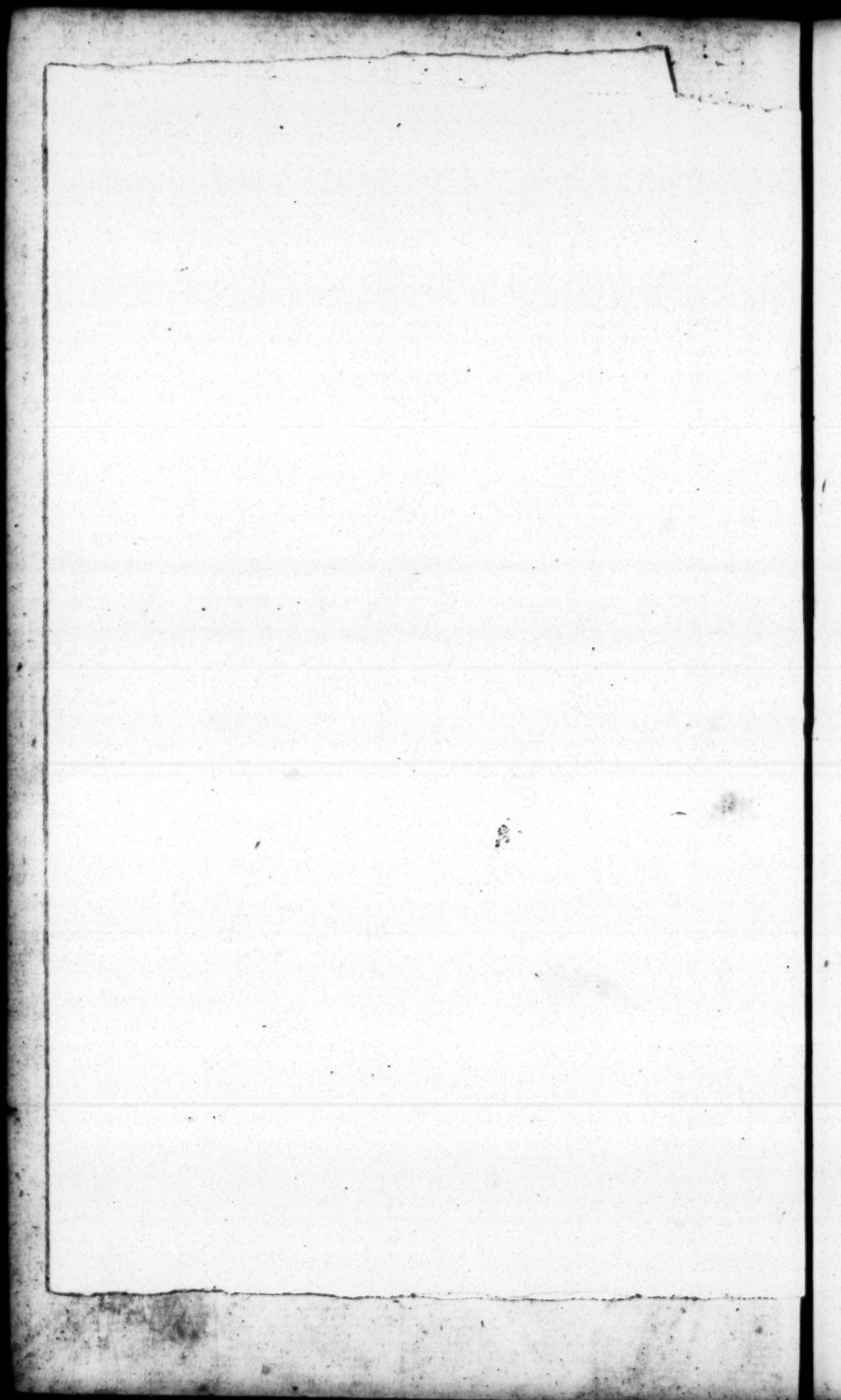
Made & Sold by Jame



Trenching Plough

by James Sharp London

M. Sharp



ART. XVI. *Improvements of modern Date,*

Mr. SYLVAN,

ALTHOUGH the observations, I here send you, are not immediately connected with the principal object of your work, viz., the improvement of Agriculture, yet they may doubtless afford entertainment to some of your Readers, who are not very conversant in books. They will hence see how much they are indebted to the industry and improvement of latter ages for most of the comforts of life: and if this should tend to increase their industry and ingenuity for the benefit of posterity, it will have a happy effect.

When Cæsar invaded Britain, says Lord Kaimes, Agriculture was unknown in the interior part of this Island: The inhabitants fed upon milk and flesh, and were clothed with skins.

Hollingshed, who lived in the reign of Queen Elizabeth, describes the rudeness of the preceding generation in the arts of life.—There were very few chimneys even in capital towns; the fire was laid to the wall, and the smoke issued out of the roof, or door, or window. The houses were wattled and plastered over with clay. All the furniture and utensils were of wood. The people slept on straw pallets, with a log for a pillow.

Henry the second of France, at the marriage of the Duchess of Savoy, wore the first pair of silk stockings that were made in France.

Queen Elizabeth in the third year of her reign, received as a present, a pair of black silk knit stockings: And Dr. Howel informs us, that she never wore cloth hose any more.

The art of making glass was brought from France into England in the year 674, for the use of monasteries. Glass windows in private houses were rare even in the 12th century, and held to be a great luxury by the pious of those times.

King Edward the third invited three watchmakers from Delft in Holland.

In the former part of the reign of Henry the eighth there did not grow in England, either cabbage, turnip, or potatoe, nor could Queen Catherine herself command a sallet for dinner, untill the king brought over a gardener from the Netherlands. About the same time the artichoke, the apricot, and the Damask rose, made their first appearance in England. Turkeys, carps, and hops, were first known here in the year 1524. The currant shrub was brought from the island of Zant in 1533; and in the year 1540, cherry-trees from Flanders were first planted in the

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S

county

† The only roses known in England before this, being white and red.

county of Kent. In the year 1563 knives were first made in England. Pocket watches were first introduced from Germany in 1557. About the year 1580 coaches were first introduced, before which time Queen Elizabeth on public days rode behind her Chamberlain.

A saw-mill was erected near London 1633, but afterwards demolished, that it might not deprive the labouring poor of employment: How crude was the science of politics even in that late age!

A LOVER OF HISTORY.

ART. XVII. *Observations on Clouted Cream.*

MR. SYLVAN,

IN your Dictionary for December last, under the article Butter, you give a description of the method of making clouted or scalded cream, in Devonshire, and have in general succeeded very well, but there are a few little matters, which you have omitted, that I beg to set you right in, and I shall add a few others, which will be found useful, though not absolutely necessary. "When it is in this condition," you say, "the cream is skimmed off," now here you have omitted, that "the cream should be allowed to stand till perfectly cold again, about sixteen hours or more, before it be taken off from the milk."

The water-bath is undoubtedly the sweetest way, and if the fire-place be contrived to be in another room, at the back of the scalding-house, it must totally hinder the smoky taste, which has been imputed to our butter, but with much injustice, unless the cream was scalded over a smoky fire. However, our dairy-maids prefer a stove, like a common kitchen one, with charcoal well lighted, or wood coals from the hearth well burnt, to the other process, as being, I suppose, easier and quicker done: Not but that they alledge, as a reason for this preference, that the cream over an open fire is somewhat thicker, that is, is thrown up more perfectly, than that which is scalded in water.

The old method of scalding cream on brandise, (trivets) over a common wood or coal fire in the chimney, is growing out of use greatly, as being replete with inconveniencies; for the very wood or coal burning under it, the smoke arising from such fuel, and the soot likely to fall down the chimney upon it, are but too likely to give a disagreeable taste both to the cream and the butter.

You have not described the true point of heat, necessary for the

the purpose. An intelligent person will, it is true, know, from the wrinkled appearance, when to take it off from the fire, (by wrinkling I mean a motion of that kind.) It must be very near to a boiling heat, without actually boiling, for if it swells up with a blister, or bladder-like appearance on the surface, as it will do a few seconds before it boils, the cream is nearly spoiled, and if it quite boils, it is entirely so, nothing but a thin tough skin remaining on the milk when cold. Our folks, however, have other cautionary marks to go by; as, when they think it nearly hot enough, they break a hole through the centre of the cream in the pan, and observe whether a steam arises through it, and many air-bubbles like pimples appear upon the milk in that hole; if so, it is hot enough; and repeated experience has taught us, that when the cream is in brass-pans, they will lose all their usual sound, when knocked on the brim with the knuckle, if the cream be fit to be taken off from the fire. They who use brass, take care never to skim the cream too near the side of the pan, for there will be near the eighth of an inch all round of a much harder consistence than the rest, and somewhat of a brassy taste: coarse earthen ware, which is usually glazed with a composition, of which lead is the basis, (if I am rightly informed) is not a whit more wholesome in my opinion, though much used, if it be an acid in the milk or cream which causes the brassy taste in this border; therefore stone-ware, if the farmers would afford it, is to be preferred.

SOUTH-HAMS.

[We shall be much obliged to this Gentleman, for a full and satisfactory account of making cyder, the management, &c.]

ART. XVIII. *Remarks on national Industry.*

[With Extracts from Observations on the Means of exciting a Spirit of national Industry, &c. 4to. 18 s.]

Mr. SYLVAN,

AT a time when there are few periodical publications read for the sake of improvement or useful knowledge, we find your Magazine treating on subjects, which are of the utmost consequence to mankind, with a great share of knowledge and abilities. I mean not to compliment or flatter you, when I declare that in my opinion your Miscellany is more deserving encouragement than any other. And while you continue to make it a repository of proper information and useful knowledge, you need not fear the public will suffer your laudable endeavours to serve them pass unrewarded.

S 2

A 3

As I wish to render it as useful as I can, I recommend to your notice a book lately published by James Anderson, author of "Essays on Agriculture and Rural Affairs." The title of it is, "Observations on the Means of exciting a Spirit of National Industry, chiefly intended to promote the Agriculture, &c. of Scotland."

As this publication is not to be had under a price few farmers are willing to bestow on a book, I propose that you insert some extracts from it in the Farmer's Magazine, and if you have no objection, the following are at your service.

Mr. A. says, and experience seems to confirm the truth, that the real riches and strength of a nation consists rather in the industry of its inhabitants, and their being usefully employed, than either their number or the money they possess. If so, it certainly ought to be the first object of our rulers to promote useful industry among the lower ranks of the people. And this, our author observes, can only be done by securing to every individual the certainty of being able to benefit himself in the first instance, by every vigorous effort he can make.

ALL essential improvements, says Mr. Anderson, must be ever carried on by the lower ranks of people;—but a dependent mind will never attempt to make any improvement, nor be brought to adopt one, however plainly it may be pointed out.—Let your attention, therefore, be turned chiefly towards those in the lowest ranks in society;—free them not only from dependence on yourself, but protect them also from the rod of others.—Cherish them in thy bosom with lenient tenderness,—they will abundantly requite you for all your pains. Instead of that stupid torpor that now renders them insensible even of kindness, their minds will be taught to glow with the warmest effusions of grateful esteem, (for gratitude is only to be met with in cultivated minds.) Instead of that listless apathy, arising from a total suppression of hope and desire, which makes them alike neglectful of good offices, and regardless of the bad;—their minds, enlivened by hope and tender desires, will become feelingly alive and active, so as to be sensible of those delicate stimuli that actuate the cultivated mind, and from the influence of which alone proceed those glorious actions that so conspicuously elevate man above all the other creatures of God.

We need not go to distant nations in search of an example of these important truths; nor need we ascend to the fabulous æra of antiquity for facts to illustrate these assertions. Spain is at this time little better than the ghost of a mighty empire, reduced to the borders of perdition by this emaciating disease,

Her

Her life is not yet entirely gone; but that existence is only known by those feeble emotions that denote her speedy departure.—Exhausted to a shadow, the meagre blood she has left, scarce creeps along her veins; and she is so entirely covered by those leeches (a nobility and gentry divested of landed revenue) who have been suffered to seize upon her, that there is no room left to administer a remedy for her. It is these vermin alone that are alive and active, who greedily seize to themselves every drop of blood as it is slowly generated, so as effectually to prevent it from contributing towards the increase of her real strength and vigour.

About two hundred years ago, Spain contained a numerous and active peasantry, who by their vigorous industry lived happy in the enjoyment of their own property; and being themselves in affluence, supported by their labour, with becoming dignity, a reputable body of independent nobility and gentry, but by a concurrence of unlucky circumstances, the national industry received a check: which having been disregarded at the time as insignificant, the people gradually became poor, and the nobles more straitened in their circumstances, and by consequence more avaricious. The poor, instead of being seasonably relieved and supported, were more and more oppressed, till those who had any remains of spirit emigrated to other regions; and the few that remained sunk into a state of abject debility. The grandees flocked to the court, in hopes of obtaining those posts, or pensions, or lucrative monopolies, which the misguided court distributed with the most destructive liberality.

From this system of policy, and inattention to the people, that mighty nation is dwindled into such total insignificance, as to be hardly in a condition to defend her dominions against the poorest nation in Europe. Her gentry, formerly rich and active, are dwindled into the miserable pantaloons, the mere ghost of departed dignity.

Look upon this picture, all ye surrounding nations, and learn from her sad example to know, that the lower orders of the people are the bees that collect the honey upon which the whole hive must be subsisted. If they are numerous, strong, and active, and if they have proper materials within their reach on which that activity may be exerted, abundance will be felt in every corner, and all ranks of citizens will be enabled to move in their several spheres with dignity and decorum.

[To be continued.]

POETRY.

ART. XIX. *On the Culture of Pease.*

S I R,

I Promised in my last, to send you occasionally some observations which I have made relating to Agriculture: I have kept my promise, and if they merit a place in your useful Magazine, your inserting them will much oblige, Sir,

Your Correspondent and Well-Wisher.

I believe every person conversant in husbandry will agree with me, that pease, even a tolerable crop, are very beneficial to the farmer; yet I think there is not that regard paid to this grain that it really deserves. It is obvious that no grain whatever requires a less strength of soil than pease, or is more fitted by nature to enrich the very land it grows upon; for from their lying in an almost horizontal position, they are peculiarly adapted to receive the dews, &c. which the earth imbibes from them in greater quantities than from standing grain, besides that luxuriant, fertilising moisture, continually oozing from them whilst in a succulent state. They remarkably smother the worst species of weeds, and meliorate, and fit the land for a spring or summer fallowing, preparatory to a wheat, a turnip, or a barley crop: Besides, the straw of pease, when well got in, is of considerable value, as fodder, for draught horses, young cattle, sheep, &c. Notwithstanding these important uses, it is notorious, that a great many farmers take two, and in some places, three crops of white corn successively, which not only impoverish the land to a great degree, but afford a far less valuable produce, than if they only took one crop of white corn, then pease or beans, or else follow that excellent system of husbandry, the sowing turnips, clover, &c.

It is very common to hear those people, who by their bad management acquire poor crops, declaim against pease, as a tender delicate grain.—So indeed they have reason to think. But if instead of ploughing their land but once in the spring, and oftentimes sowing them early in the season, above furrow, whilst the soil is in a crude state, I would advise the land, destined for pease, to be ploughed up between Michaelmas and Martinmas, with a depth according to the nature of the soil; so will it meliorate during winter, and be in an advantageous condition for sowing in the spring. Then when a good season presents, I would have them sown under furrow, the land being skilfully ploughed; that is, if the land is in good condition; but if it be a tough clayey soil, and not properly meliorated, it is better to plough it as deep as in Autumn, and sow them above furrow,

furrow. Great pains should be taken in this case, to harrow the land well, for good harrowing tends much to the production of a good crop.

It is a great error to sow pease too soon; for being of a tender succulent nature, when in a state of vegetation, the frosts, or even the cold easterly winds will very much affect and injure them.

From the middle of March to the middle of April, pease with the greatest propriety may be sown. The small, or Scotch sort first, being the most hardy; the rounceval, the great country white, and the other species of white greys the next; and the true white the latest.

In regard to the quantity of seed to be sown, that differs according to situation, season, size of the pease, and nature of them, and the soil: nine Winchester pecks of the small sorts are generally sufficient for an acre, but these only suit the poorest, and old kinds of tillage, upon account of their yielding on rich soils a redundancy of straw and little grain.

The other sorts suit better upon sandy, gravelly, or loamy land, and I allow ten or eleven pecks of the country whites, and from three bushels to three bushels and a half of rouncevals per acre; and in general about a boll of white pease is sufficient for an acre.

It is a general maxim with me to sow pease ranker than any other corn in proportion, since I am convinced by so doing, they stand the frosts better, and if ever they cover the ground well, no succeeding drought will ever do them any material injury.

I have for a series of eight years made repeated experiments, to ascertain the best method of cultivating this important grain, and this little essay contains the result of my observations upon them.

The above method produces a certain, and almost double crop, to that in general made use of. And I can justly aver, that for eight years, I have never had a failing crop of pease, nor a failing crop of that kind of grain, which succeeded the crop of pease.

North-Riding, Yorkshire,

RUSTICUS.

[We are obliged to our correspondent Rusticus, and perfectly agree with him that pease are a very excellent meliorating crop, and think his mode of tillage promises to be a good one, more than one spring ploughing being in general necessary. They come off the land time enough for wheat, for which they are a good preparative.]

ART.

ART. XX. *Query for a Remedy to destroy Fleas.*

Mr. SYLVAN,

YOUR giving the following query a place in your very valuable Magazine will be considered as a favour conferred on, Sir, your friend and servant,

April 13, 1778.

A. M. RECORK.

Q U E R Y.

Can any one of your Correspondents give an effectual method of destroying fleas, or driving them away from lodging rooms, without its being pernicious to those who sleep in the rooms at the time it is used?

ART. XXI. *On the Solution of Lead.*

Mr. SYLVAN,

YOUR inserting the following experiment in your Magazine will oblige your constant reader and servant,
London.

J. R.

A gentleman intending to make the extract of lemons, he squeezed the juice of a thousand lemons into a large glazed earthen vessel, and allowed it to stand for two days. He then poured off a gallon of the clear juice into another vessel, and put it in a pot of boiling water to evaporate. During the evaporation, a great quantity of sediment appeared among it, which upon examination he found to be the salt or sugar of lead, to the amount of several ounces. He then poured off the remaining part of the juice out of the first earthen vessel, which had not been put upon the fire, and was surprized to find the sides and bottom of it also loaded with a large proportion of the same sort of salt.

As this might have happened in the hands of persons less judicious and ignorant of the effects of this deceitful poison, it may be proper to observe, that these earthen vessels had been glazed with lead or lead ore; which glazing is easily dissolved by almost all kinds of acids, and converted into this noxious salt, or sugar, as it is called, of lead. The glazing of all the common brown pottery ware, of a brown or black colour, is either lead or lead ore. If black, it is lead ore, with a small proportion of manganese, which is a species of iron ore. If yellow, the glazing is lead ore, and appears yellowish by having

ving some pipe or white clay under it. The colour of the common pottery ware is red, as the vessels are made of the same clay with common bricks, which is always red when baked. These vessels are so porous, that they are penetrated by all salts, acid or alkaline, and so are unfit for containing any saline substance. They are improper (though too often used) for preserving sour fruits or pickles with vinegar. I have observed the glazing of such vessels much corroded by keeping in them for some time pickled French beans, upon which boiling vinegar has been poured; and upon evaporating the vinegar, have found a quantity of the salt of lead. But a sure way of judging whether the vinegar or any other acid contents, have dissolved part of the glazing of such vessels, is by their becoming vapid after standing in them some time, or losing their sharpness, and acquiring a sweetish taste; in which case the contents are to be thrown away as pernicious.

The most proper vessels for preparing inspissated juice of lemons, oranges, or any other acid fruits, are, first, porcelane or china ware. The substance of them is of so close a texture, that no saline or other liquor can penetrate them. The glazing, which is made likewise of the substance of the china, is so firm and close, that no salt or saline substance can have the least effect upon it. By china I mean Chinese china; for some species of the European manufactory are certainly glazed with a fine glass of lead, &c.

Next to china, and as I have found sufficiently fit for the purpose, is the stone ware commonly called Staffordshire. The substance of these vessels is a composition of black flint and a strong clay that bakes white. Their outsides are glazed by throwing into the furnace, when well heated, common or sea salt decrepitated; the steam or acid of which flying up among the vessels, vitrifies the outside of them, and gives them the glazing.

This stone ware I could never find injured or affected by any kind of salts, whether acid or alkaline, or any liquors hot or cold; nor do such vessels alter the taste or quality of any thing put into them. They are therefore extremely proper for all common uses; but require a careful management, as they are much apter to crack with any sudden heat than the Chinese china.

The Hessian ware, or the vessels made of the same substance with the Duke d'Alva's bottles, commonly called grey beards, I take to be made of strong pipe clay mixed with sand, and glazed in the baking by the alkaline salt which arises from the

wood used in baking them, wood having always the effect when the furnace is intense, to vitrify the outside of all clay.

I had almost forgot to mention the pottery ware with a white glazing, commonly called Delf, the best being made there. The substance of the vessels is a whitish clay when baked, and soft, as not having endured a great heat in the baking. The glazing is a composition of calcin'd lead, calcin'd tin, sand, some coarse alkaline salt, and sandiver; which being run into a white glass, (the white colour being owing to the tin) is afterwards ground in a mill, then mixed with water, and the vessels, after being baked in the furnace, are dipped into it, and put into the furnace a second time; by which means, with a small degree of heat, the white glass runs upon the vessels. This glazing is exceedingly soft and easily cracks. What effects acids will have upon it, I cannot say, as not having tried them: but I now reckon such vessels improper for inspissating the juice of lemons or oranges.

ART. XXI. *Substance of the Act for granting a Duty on Inhabited Houses.*

A DUTY of 6d. in the pound is laid upon all houses, with the household offices, worth 5l. a year and upwards, and under 5 l. and of 1s. in the pound upon all houses, &c. worth 50l. a year and upwards; to be valued by the assessors of the window duties, who are also assessors for this duty, upon their oaths.

The duty to be paid quarterly, and to commence on July 5, 1778; the first payment will consequently come due on Oct. 10, 1778; and the usual time being allowed for surcharges and appeals, it is to be collected Jan. 5, 1779, at the same times with the window lights.

The tenant or occupier of the house only to be liable for the duty, and not the landlord.

Buildings requisite for carrying on manufactures, trades, and occupations, and warehouses, are exempted from paying this duty.

Persons not paying parish taxes are exempted from this duty.

The duty is to be raised, assessed, &c. in the same manner as the window lights, and with like penalties, &c. the same poudage also to be allowed to receivers, &c.

The assessors to be allowed 3d. for every house assessed, on account of extra trouble.

The

The Commissioners are to meet in the respective counties on or before the 30th of April 1778, for carrying the act into execution; but where this cannot be complied with, the Commissioners are empowered to meet at any future time.

Assessors acting without taking a prescribed oath, are liable to a penalty of 20l.

The duplicates to contain the number of houses paying the duty in each parish, with the amount of the duty, that the Receiver-General may know what is to be paid to the assessors for their first assessment at the rate of 3d. each house.

The assessors to make their assessments, and deliver them to the Commissioners on or before the 10th of September; and the Surveyors to certify their surcharges to the Commissioners on or before the 16th of November next; and appeals are to be heard between the 10th of December and the 4th of January next, for the first quarterly payment, which will become due on the 10th of October, but afterwards at the same time with those for the window lights.

Apartments in colleges, and chambers in inns of court, to pay as separate houses.

Houses of his Majesty, the Royal Family, and foreign Ministers, are not liable to the duty.

Commissioners, &c. are empowered to take copies of all books of parish rates; and officers having custody of them are liable to a penalty on refusing to permit such inspection, or neglecting to attend the Commissioners with the books when required.

In all parishes where the houses are assessed to the poor, &c. at their rack rent, the assessors are restricted from assessing them at less to this duty; and where they are assessed to the poor, &c. at any proportionate part of the rack rent, the assessors are not to assess them under the full rack rent from which such proportionate part is taken.

Farm houses not to be subject to this duty; and no house to be considered as a farm house, but such as are occupied merely for the purpose of husbandry; and no farm house occupied by the owner, is to be entitled to the exemption, if valued under this act at more than 10l.

Hospitals, or houses for charitable purposes, are not to be subject to the duty.

Houses to continue to be rated to the poor's rate, &c. as before the passing this act.

No person to gain a settlement in a parish by payment of this duty.

No house to be considered as inhabited, unless the owner or a tenant lives therein.

ART. XXII. *On noxious Weeds.*

Mr. SYLVAN.

THERE are several sorts of weeds, which though they do not immediately molest you, yet are the parents of that crop which cost you so much labour and expence, in the next spring to extirpate.

To prevent this labour and great part of the expence is no difficult matter, would you only cut down the plants themselves, before the seed is fully ripe.

The hedges and banks, in the neighbourhood of London, abound with various sorts of thistles, all which have, what the botanists call winged seeds; which do not drop into the earth, where they are raised, but are waisted by the wind to very distant places, where they sow themselves, come up early the following spring, and are of such a nature as to impoverish the soil, or destroy more useful productions.

There are such crops of these thistles that I cannot but put those in mind of it, who are most concerned, and who would find their labour in cutting, gathering, and burning these weeds repaid immediately, by the value of the ashes alone.—A few less able hands, than are necessary for reaping, or the reapers employed in a wet afternoon, would quickly clear a farm from a large crop of thistles, docks, ragwort, hemlock, and the like, most of whose progeny must otherwise be maintained at the industrious farmer's or gardener's expence.

I am, Sir, your humble Servant,

FORESIGHT.

[The Editor of the FARMER'S MAGAZINE presents his Compliments to Correspondents, and beg in future they will direct their Letters to Mr. Cruttwell, Bath.]

POETRY

P O E T R Y.

The C U R A T E S. An ECLOGUE.

[Being a Sequel to the PARSONS. An ECLOGUE, page 79.]

WHILST at the press from hand unknown arrive,
Two Vicars' plaints, the long felt grievance, Tithe;
Whilst coolly told, the Priesthood's plea we hear,
Whilst some may feel it, and whilst some may sneer;
Two Curates met, on different errands led,
T' instruct the living, and inter the dead:
Their errands different, yet their churches near,
In converse leagu'd, for three long miles they steer.
Due greetings past, — for these e'en Curates pay,
In spite of what the money'd 'Squire may say,
Who thinks that compliments are only due
To men like him, the only wealthy few;
That they to manners hold the sole pretence,
And want of money must be want of sense.
But as a hint, that manners, unconfin'd
To fortune's fools, are rules for all mankind;
Their greetings past, as chance or fancy led,
The topic turn'd to what these friends had read;
The present thoughts and papers of the times,
From Wilkes's reasons unto —'s rhimes;
How each his separate talent had display'd,
Foes to oppression, nor of — afraid.
To other tracts as other tracts occur'd,
Their chat extended, as they onward spurr'd.

In minds full blown, as those in bud, we see
That innate seed, a love of novelty;
Hence 'tis with writings, when our hearts they reach,
And teach those precepts, which ourselves would teach;
What last we read shall most our thoughts employ,
Again we read it and again enjoy. —
Hence 'twas, it seems, these brothers of the gown,
From public woes, were led to paint their own.
Just at his eve's repast the one receiv'd
(O happy time, from children's noise reliev'd)
The far-fam'd Farmer's monthly bill of fare,
Of every article that's worth their care:
Amongst the rest the PARSONS ECLOGUE spics,
Two worthy men, or else report tells lies.

Such

Such flagrant truths on every line impress,
 The whole so easy, and so well express'd.
 He often views it, nor by viewing tires,
 The more he eyes it, still the more admires.
 Full of the subject, to his friend relates
 The whole contents, and every grievance states;
 So close, he adds, these truths ourselves affect,
 I could not read them with a cold neglect;
 The public woes, as public men, we share,
 Alas! our own — ourselves alone must bear.
 Since yester eve, how often have I sigh'd,
 " Oh had I in my youth unnotic'd died! "
 We sure of all men are to trouble born,
 The jeer of envy, and the mark of scorn.

S E C O N D C U R A T E.

To this with heavy heart and tearful eye,
 Asknowledge prompts, the other makes reply.—
 'Tis true their case is hard, their wrongs are great,
 I've heard thy faithful memory repeat:
 But what are these, to what we Curates feel?
 No more than lead in hardness is to steel.
 O'er Mendip hills, in pathless wastes of snow,
 Where all the winds in full-mouth'd concert blow,
 Poor cheerless we are forc'd all hours to roam,
 And bless our stars, that land us safe at home.

But Monday last a rough-hewn collier sends,
 (Religion's foes are to its Priests no friends)
 The message was in terms uncouth express'd:
 " His wife since Friday had been laid at rest;
 " Fit for the earth he deems the corpse must be,
 " Orders the Parson to attend at three."
 At three, as fix'd, the orders were obey'd,
 Nor corpse, nor collier, their appearance made.
 The clock strikes four, no tidings yet arrive,
 Our hopes no nearer, when time points at five.
 Darkness and fix with hasty strides advance,
 At distance home, no guide to trust, but chance.
 Just as the mimic pomp in sight appear'd,
 As safety bade, had I for home prepar'd;
 But stopp'd t' avoid offence, to peace inclin'd,
 The dead in holy hope to earth consign'd;
 The sacred rites perform'd the cause enquir'd,
 That stay'd their steps beyond the time desir'd;
 Or why they'd not contriv'd on God's own day
 This last good office to the dead to pay;
 Complain'd how hard—At which in fiercest rate,
 A clowr demands, " how Curates dar'd to prate?"

What

What were they kept for—for what purpose made?
What, but to wait on them, their ma'ers paid?"

Such usage this! what mortal man could bear?
Not Job himself, had Job himself been there.
But then says Reason, who'd with brute engage?
So finding patience kindling into rage,
Better I ween'd not stay to brave such foes,
For words too often carry men to blows.

FIRST CURATE.

Just your conclusion—better quit the field,
Than bandy words with those, whose bosom steel'd
'Gainst force of reason—and the force of law,
To no man civil, and of none in awe,
Careless alike of what they say, or do,
Would treat a Christian, as they'd treat a Jew.
Besides—St. Paul exhorts (who knew to preach)
'Gainst blows and wranglings those ordain'd to teach.

Nor does your case a case unequal'd stand,
Nor will it while a Curate's in the land.
Not one in ten can say he's better us'd—
Unless like dogs we cringe—like dogs abus'd.

Nor to the rustic are our woes confin'd,
Others we feel of a severer kind;
Those who are better taught our worth to know,
The like low insults to their pastors show.
The Lord, too great for Curates to advise,
Attends the Rector but to criticise.
The Baronet may rarely condescend
To hear the Curate, but not call him friend.
The 'Squire may sometimes, if not too polite,
His friend the Curate to his board invite:
The Curate goes, but ere he takes his leave,
Is sure some bitter potion to receive.

Hear now a truth, yet hardly seven days old,
Myself an instance of the story told.

The humble cot which Fate had mark'd my own,
Small like my income, was too near a town;
Not many furlongs from his Worship lies,
Who owns the manor, and who claims the tithes.
His Worship once, a downright farmer known,
By dint of—luck, is something greater grown.
His dad, his grand-dad, farmers—in their way,
Both simple, honest men, the neighbours say,
Struts now in lace, and talks most wondrous wise,
Of law, of justice, sessions, and excise;
'Mongst men of parts would rank, though such can tell
He's hardly taught to read, much less to spell.

Such

Such is the man, my little cot stands by,
 His Honor he, the hapless Curate I.
 Grown fond of cards, ah luckless cards for me!
 The Curate always of his set must be,
 Tho' when we play, we always disagree.
 The last attack his passion ran so high,
 He plainly gave me more than once the lie;
 Not e'en a Bishop could from wrath refrain,
 I flatly gave him back the lie again.
 His coat the view'd, and swelling bravely swore,
 He'd do,—what mortal never did before.
 I view'd his coat too—told him to his face,
 He'd better line his head than storm in lace;
 That want of laces, lace would not supply,
 Nor want of breeding, all his foppery—
 Just then my wife, poor soul! her entrance makes,
 Our quarrel hush'd, we each pursu'd our stakes.
 Since when I've nothing of his honour seen,
 To try his courage or to raise his spleen.

SECOND CURATE.

Tho' poor our pittance, yet for that defect,
 Our education sure demands respect;
 Equal in this at least, we equal claim
 With those of fortune, and with those of name.
 Our office more demands,—but here they'll say,
 Man soon without a priest may learn to pray.



Well then, since favour must be dealt by rule,
 Without distinction or of rogue or fool;
 Since partial wealth th' unequal balance guides,
 All worth determines, all respect decides;
 Hard as my lot may be, I'll prize that state,
 Plac'd at a happy distance from the Great:
 No more in angry mood, or plaintive strains,
 Will talk of Mendip brutes, or Mendip plains;
 Patient, tho' poor, will wisely learn to bear
 The brunts of storm, and drudgery of pray'r.

Thus whilst they spoke, the burden of their heart,
 Here met the roads which both oblig'd to part.
 Hoping that God would be the Clergy's friend,
 That men might alter, and their morals mend;
 That change of these might that of times produce,
 Their Vicars know less wrong, they less abuse:
 In pray'rs thus fervent which should each excel,
 They both contending—wish'd each other well.

